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THE ARCHITECTURAL PLANS FOR THE GREATER UNIVERSITY OF CALIFORNIA.

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The cruel need for expansion architecturally in response to the extraordinary growth of the University of California in numbers and in efficiency brings home very closely to all of those who come in contact with the daily life at Berkeley the immense importance of entering at once upon the task of structural development. To those of the alumni and the community at large who have the real interests of the University at heart the situation must seem hardly less sore, when they from time to time visit the grounds and have occasion to note the utter inadequacy of housing under which the great University suffers.

Rapid headway is now being made upon the plans, and the following paper has been written in response to the many expressions of interest and inquiries with regard to the progress of the work. It is hoped, moreover, that valuable suggestions may be elicited from the University's well-wishers.

I.

It may not be generally understood that the plans secured two years ago through the munificence of Mrs. Hearst and prepared by M. Émile Bénard were not, and made no pretense of being, other than preliminary sketches. They were on the very small scale of fifty feet to the inch and

showed little more than the outlines of a scheme. They embodied, however, in a large way the ideas of one of the most brilliant architectural designers of our time, a man who a generation ago won the Grand Prix de Rome with a set of drawings whose charm has rarely been equalled, perhaps never surpassed, in the history of the Ecole des Beaux Arts. His original competitive drawings had been passed upon and approved by a most distinguished jury who had selected M. Bénard's as the best plans submitted at the time of the famous international competition. Later on, after a visit to Berkeley, M. Bénard prepared a revised scheme, making many important modifications and improvements. It is these drawings which form the basis for the further studies which are now in hand.

As all who have had to do with building operations well know, there is a long step between the preliminary indication of a scheme and the execution of working drawings. If the sketch contain nothing more than the original idea, an indication of the general direction in which to proceed, with little or no attention given to the adjustment of the details, that is all that should be expected. It is for the working drawings to contain the results of the development of that original idea through all succeeding stages up to the point where it is possible to carry the design into execution from them.

Starting then from the basis of the plan as presented by M. Bénard, the task seems to be essentially this, namely, to evolve a scheme for the University which shall preserve the fundamental idea of his plans without being so over-punctilious in that preservation as to allow the plans to impose themselves dogmatically upon actually existing conditions with which they may prove to be out of harmony and with which the original designer may fairly be supposed to have been unfamiliar.

What then are the fundamental characteristics of the Bénard scheme? Looked at in the largest way the plan is seen to be composed upon a main avenue or esplanade run-

ning nearly east and west across the grounds in the direction of their greatest length and forming a central line of cleavage from one end of the grounds to the other. Two hardly less important axes running north and south cross the main esplanade at a considerable distance apart. The more westerly of these lines determines the center of a great court which has received variously the names Fine Arts Square, Library Square, etc., according as in one sketch or another the Museum or Library filled the place of honor and gave the court its special character. The more easterly axis opens up a long vista toward the south which is terminated by the Athletic Field and the Gymnasium, quite at the southern boundary of the grounds. The various academic buildings are grouped upon these three axes in accordance with well recognized principles of formal architectural composition, yet in such a manner as to give great variety of aspect. The buildings are of varied sizes, of different scale, of diversified outline. The tendency of the architectural treatment is nevertheless consistent in its generally classic character.

Expressed in few words these are the salient characteristics of the composition as outlined by M. Bénard. And these are the elements which it is proposed to guard; not indeed with any arbitrary purpose or an unintelligent application of the letter rather than the spirit of the plans, but in accordance with principles which should under any conditions govern the development of a great scheme like this; principles based on the necessity of economizing materials and of reducing destructive agencies to a minimum—the necessity of not violating the grounds but of interpreting them, through the harmonizing of discordant elements, the suppression of petty and unpleasing features, the accentuation of natural beauties, and the simplification of complex conditions generally.

It signifies little, architecturally speaking, that in a great plan one building is called Library, another Museum, another Auditorium. It is not the names to which these

buildings answer, but the mass and the general disposition of parts which count in the effect of the whole. The essential fitness of things of course demands that an important feature shall be given an important place, and the architectural detail and composition of each individual building must indicate its special character. But mass must always be the prime consideration. It should not, then, be considered in itself a change of *parti* if the Library for example be moved from the western to the eastern side of a square, or the Mining Building from the southwest corner to the northeast corner of the plan. The present studies are being made on this assumption, that a mere shuffle of the buildings among themselves cannot justly be considered a material change.

On the other hand does it seem reasonable, in view of the constant changes and progress of scientific requirements and of educational ideals, to attempt to fix the plan irrefragably, to settle it in all its details once and for all time, so that it may not be adjusted as succeeding years may find to be desirable? To attempt such a task is to foredoom defeat. Future generations will consider themselves bound by our preparations to the extent, and only to the extent, that we have foreseen their needs and have planned wisely for them. We cannot force them to follow out our schemes if these run contrary to their own inclinations; but we may fairly expect that if we plan wisely and in accordance with the really natural and right thing, our successors will follow out what we arrange, if only because it will accord with reason. Outside of what we actually execute, the most we of today can do is merely to prepare the channels for those who come after us; but if we prepare the channels well and in accordance with irrefutable laws the flood of future development will find the beds we trench as inevitably as rivers seek the sea by the broadest and most direct channels open to them.

As long as is preserved the fundamental idea of the great composition, instead of an unsightly chaos of build-

ings sprinkled at haphazard out of a sieve, so long the integrity of the plan will be maintained, however its details may change. The plan is a precious heritage whose value to the University cannot be overestimated; for it is not a dead fetish, a rigid and unchangeable form,—it is a living organism, a loving hand-maiden, capable of responding today, tomorrow, through all generations, to the quick needs of the University. The real interests of the two are one. Without its plan the University cannot grow normally and with a likely assurance of safety from those hideous inconveniences to which are reduced universities and cities which have not the foresight to prepare for their own inevitable growth. The idea should not be arbitrarily to arrest study on the plan,—at any given point to crystallize it and declare it once for all arrived,—this dimension precisely thus, that mass just so. The idea should rather be to keep it supple, so that as one need of the University after another announces itself and calls to be recognized, each may have its influence upon the whole. This is as far as possible from asserting that a narrow interpretation of the needs of a given building should be allowed to dominate the plan as a whole any more than the plan should be allowed to dominate the University to its ill. The two must go hand in hand, their interests if apparently divergent must be reconciled and their disparities equalized till an harmonious whole be reached.

Seen in this light, how full and noble appears the rôle which the plan is destined to play in the expansion of the University. Its relation to the University may be compared with the relation of the University to the people. It opens paths for advancement along right and broad lines.

II.

The first problem which presented itself for solution, when the task of adapting the plan to the site was undertaken, was the establishment of the most favorable position for the main axis. This central line of the composition, its

back-bone, so to speak, was shown on the preliminary plans as a continuation of University Avenue. This position for the axis has some undoubted advantages. University Avenue is a broad and, prospectively at least, a fine street. The point at which this avenue strikes the western end of the property, moreover, lends itself naturally to the emplacement of an imposing entrance, the formal gateway from the outer world into the academic cloisters. The broad, shallow amphitheatre of hills above it to the east gives also within its own limits a certain splendor of effect, bare and bald as those fields now are. A fine sense of bigness is had here. Beyond the brow, however, difficulties present themselves. The ground falls away rapidly and irregularly. The central line crosses the north cañon of Strawberry Creek at an awkward point, and at the westerly entrance to the Botanical Garden is seen to run close in under the northern terrace just south of the Greenhouse and to skirt the garden throughout its length on its extreme northern verge. Continuing over the hills the line crosses their flank at a considerable distance down the steep southern slope. So much of symmetry with regard to this axis as is shown on the plans would necessitate a great amount of grading and filling and would obliterate many scenic beauties. For the entire distance through the present Botanical Garden in order to get approximate balance, or even to obtain a level floor for the esplanade, it would be necessary to blast off a considerable portion of the rocky knoll on which the Observatory stands and to fill the garden itself to a depth of several feet. This would seem a pity in view of the great depth and richness of the soil of the garden, if not on account of the difficulty of cutting off the top of the hill. Following the axis eastward, it is observed that instead of lying naturally on top of the hill it skirts the side and makes it necessary for a grade and fill of something like fifty feet each in order to secure the platform or belvedere contemplated upon the plan, besides giving a most unrepouseful and lopsided effect. Again unless the

summit of the amphitheatre above Oxford Street were removed, the principal object in having a straight axis for the composition, namely the long uninterrupted vista, would be defeated; for the ground falls off so rapidly east of that hill that it would be impossible to see over the brow anything of the architectural group beyond.

These difficulties were recognized and in M. Bénard's revised plans were met by a bold device. The crown of the hill was in that design lowered by an average depth of twelve feet and the succeeding declivity was crossed by a broad causeway and bridge, lifted above the adjoining levels to a height of seventeen feet. The grade line of the bridge was maintained throughout the entire length of the Botanical Garden which was shown as filled to an average depth of ten feet. By these means virtually a single magnificent slope, at a very easy inclination, held from the entrance at Oxford Street to a point opposite the small Gardener's Cottage east of the Mining Building.

The stupendous effect thus secured is apparent. Only a man of lofty power of imagination could have conceived so thorough-going a transformation of the grounds, only a designer with supreme architectural courage could have envisaged such a task as that contemplated in this project.

It is a pleasure to acknowledge the advantage of having a great idea constantly before one as inspiration in a task like the present. In the study of detail, and under the constant strain of encounter with hard practical conditions, one must always be on his guard lest he lose sight of the grandiose possibilities of his problem; and the University is bound to be an immense gainer by reason of the largeness of conception which has marked the initial steps in this undertaking. Nevertheless it is necessary now to look upon the practical side of things, and to weigh all the arguments for and against each suggestion, before committing the University to its course of architectural development. The great conception is of record. It now behooves to take up the adjustment of the details of that conception so that

it may be carried into execution without too great a sacrifice of magnificence and without so great a cost as to jeopardize the entire scheme.

The question resolves itself into this: Can the effect of such a plan as M. Bénard's, or one approaching it, be secured at smaller outlay, and with less destruction of natural beauties of the site, by a rearrangement of its parts which shall still preserve its general disposition?

After a most careful study of the grounds, many sketches and repeated surveys and checkings, it has been found that there is a position for the main axis which possesses equal advantages with that through University Avenue, in the way of beauty of effect, if indeed it do not surpass that line; and which calls for a much smaller expenditure, in money and in terms of natural beauty. The new line is drawn from the exact summit of the great hill above the campus, to the lowest portion of the grounds, grazing the northern outskirts of the eucalyptus grove just east of the Center Street entrance. You can trace the line from the summit down through the shallow gully just below, out over the open knoll north of Ben Weed's Amphitheatre, down past the Gardener's Cottage, across the open glade between the old and the new Mining Buildings, through the middle of the Botanical Garden and so on across the creek, till it meets the road north of the eucalyptus grove, in line with the road's curve. This line requires a much smaller amount of excavation and filling in order to obtain the greatest simplicity and unity of effect, for it corresponds with the natural central line of drainage. Its establishment has revealed the possibility of retaining many minor beauties of the site from its beginning to its end. It has the advantage of preserving the entire middle portion of the grounds at approximately their present grade.

It is extremely interesting to note that the axis thus placed is parallel with that of the principal buildings at present on the grounds. The Library, North, South and

East Halls, the Chemistry Building, the old Mining Building,—these are all arranged, as if with intent, parallel and perpendicular to the line which has been found to give the least trouble as a central axis.

The situation of the medial line suggests the immediate development of the Center Street entrance. In line with this improvement a fine curving roadway would swing around to the left before reaching the creek, traverse the bit of garden, and connect with the road which circles around the eucalyptus grove to the central line of the composition. Fancy then the impression of a stranger entering the grounds. From a commonplace village he enters a beautiful park, confined within a small compass but possessing all the elements of great natural scenic beauty. He is sensible of an idyllic grove of ancient oaks to the right, he is sheltered on the north by a delicious coppiced bluff, while in front the view is closed by a glorious bouquet of eucalyptus. He is surrounded on all sides by a natural landscape which prepares his spirit for finer things to come. As he proceeds around the eucalyptus grove, suddenly there opens before him a wonderful view composed for his enjoyment by nature herself. The vista is fine to-day, even obscured with trees as it is; but when it is opened up, and all its natural possibilities of beauty are disclosed,—when it is defined, rendered intelligible, accentuated, by the great group of beautiful white buildings embowered in greenery,—then it must indeed prove to be one of the most soul-satisfying panoramas in the world.

Proceeding eastward one observes to the left the verdurous palm cañon all a-glisten with lush magnolias, and obtains through close-woven branches of oak and bay a charming glimpse of the President's Mansion, with its red-tiled roof; to the right at the extreme limit of the grounds is the old Gymnasium, a fine site for a fine building, one of these days. The western cross axis is likely to find its place somewhere near here. Beyond, to the east, lies the Botanical Garden, an Eden-

bower of perfume and glowing color, at whose termination is the hollow south of the present Mechanics Building. It is at this point that the most favorable situation for the eastern cross axis presents itself, opening out a vista far to the south. At the crossing of the axes, in the shallow basin existing there to-day, it has been suggested that a broad lily-pool be delved, with a fountain to introduce the play of shimmering reflections and the pleasant sound of splashing waters.

The vista eastward upon the main axis is closed in wonderful symmetry by the great hill which uplifts its noble front above the groves. But best of all, the view westward from the summit is one of absolute repose. The lines and masses of the landscape in foreground, middle ground, and distance, group and balance exquisitely about the axis, and conduct the eye as by an index to the Golden Gate.

Never to be forgotten was the expression of one of those most interested in the University's development when this line first came to his attention one fine spring day upon the brow of the hill. The University man was asked to swing his glance like a pendulum from north to south and back again until he felt complete repose. After a moment he said, "I find my eye comes to rest at the Golden Gate. The view seems to gravitate to that point. The line thither would seem to be the visual axis of all the countryside as seen from this point." When he was told that it had been found by dint of exact calculations that the line of natural cleavage of the University grounds tallied precisely with that visual axis, "Why," said he, "it is enough to make one superstitious!"

And indeed there is something profoundly affecting in this oneness of the far-reaching vision and the hard, cold facts of unrelenting topography. What a field here for a flight of symbolic poetry! The boundless waste of the Pacific cloven by the axis of the University and brought into the system of its actual architectural composition! What vast horizons open to the mind's eye beyond that

wondrous passage to the sea! What far oriental realms lie ready there for Alma Mater's peaceful and beneficent conquest!

III.

Let us now glance at the grounds from a slightly different point of view, and with less reference to the lines of the plan. This is essential for a real understanding of the situation.

The property of the University seems at first glance to be somewhat complicated as a site for a monumental architectural group. But if one removes himself in imagination to a point in the sky above the grounds and views the territory as from a balloon or in bird's-eye perspective, a remarkable unity is seen to exist. The myriad minor details lose their importance and one is enabled to see different parts in their relationship to others and to the whole. As one studies the site at close quarters until its idiosyncrasies become familiar as the face of a friend, the same effect is produced. Certain great masses establish themselves unavoidably; other masses subordinate themselves; and in the end from the crowd of impressions a wonderful simplicity is disengaged. This character would be even more distinctly marked if the boundaries included the irregular tract of land lying between Hearst Avenue and the north branch of Strawberry Creek east of Euclid Avenue, which naturally falls within its province. The University would then possess a realm limited, if we except the Hillegass Tract, by natural boundaries in the shape of water courses; and its territory would have a cross-section like that of a continent, with its sunken central valley and its higher lateral structure bordering the creeks. In spite of the great unity of the ground, there is, needless to say, sufficient variety to give countless opportunities for charm and freedom of effect.

The portion of the property which, with the exception

of the Hillegass tract, is most favorable for building operations on a large scale is, roughly speaking, the region bounded by Strawberry Creek on the south, extending north to the northern limits of the grounds, and stretching from the present Running Track on the west to the foot of the steep slope of the hills above Ben Weed's Amphitheatre on the east. Its slope is broad and gradual. It is somewhat cut up by dips and rises, but none of these is of great size except the central garden, which helps instead of hampering the design. The region's natural fitness for constructional uses is shown by the fact that nearly all of the present buildings are situated within it, evidently because here were the easiest sites. Though the flank of the garden to the north seems irregular, this is more a matter of general impression than of fact. The contour lines show it to be to all intents and purposes symmetrical with the broader, simpler slope on the south. The amount of grade and fill which would be occasioned by the construction of buildings symmetrically placed on these flanks is very nearly equal. A great deal of the apparent diversity of the region comes from the tree growth, most of which is of a nature readily to be replaced if destroyed to make room for buildings. The chief vista of the tract, through the garden, is part of the main vista of the grounds as a whole, and this, together with the garden itself, forms its principal characteristic beauty. The garden is the heart of the entire grounds.

The hill-slopes to the east of the section just described are exceedingly steep, and in order to be used for constructional purposes at all would require very considerable grading. The summit is the natural site for the Observatory. The lower flanks are occupied on the plan by dormitories, which, however, are not likely to be built at present.

The western part of the grounds is made up of two very dissimilar parts almost equal in area and divided by the imaginary line of the main axis. It will be seen that the axis lies between Centre Street and University Avenue, that

is to say, at Addison Street. A future generation may take advantage of this and continue the main avenue of the University westward, widening Addison Street, crossing Shattuck Avenue, cutting across the green fields to the bay by a magnificent boulevard, and establishing there a ferry direct to San Francisco. Such a development would be very fine, but it is unnecessary to consider the possibility of it at the present time. Centre Street is the natural approach to the southerly half, as University Avenue is the natural approach to the northern half of this part of the property. The peculiar beauties of the southern half consist in the creeks, the grove of live-oak trees and, in a less degree (owing to their more rapid growth), the tuft of eucalyptus. The distinctive beauty of the northern half resides in its amphitheatrical form, the lines and masses of which are very fine in their present state, and need the slightest possible interpretation in the way of avenues and planting. The slopes are gentle, and in this respect are suitable for building operations, but as an artistic development of the region, it would seem to the present writer far finer as a park or arboretum—a buffer, or, if you like better, a vestibule, between the village and the academic regions. Moreover this section is remote from what must always be the center of the University group. It is admirable for agricultural and forestry purposes throughout. The soil is deep and of-excellent quality, probably surpassing in these respects that of any other portion of the grounds, with the single exception of the territory now used as a Botanical Garden, together with the irregularly outlined portions immediately west including the present Football Field and the cañon leading up to the President's Mansion.

The simplest part of the grounds is the Hillegass tract. It consists of one broad, gentle slope, from Telegraph Avenue to College Way. It is admirably adapted to architectural development, and is suitable for any of the phases of university work. Since it is level and uniform, however, by comparison with any of the other portions of the

property, and since the athletic fields require this character more than any other department, it has been thought wise to devote this region very largely, if not exclusively, to this purpose. Though the slope is gradual, nevertheless a considerable drop exists from one end to the other of the tract, and while it is possible to secure a single level for the entire Athletic Field, such a course would necessitate a very large expenditure. It is likely, therefore, that the Athletic Field as a whole may be terraced at different levels. A very beautiful effect can undoubtedly be obtained in this way.

To sum up, it will be observed from the above description that the grounds naturally divide themselves into four parts. Of these the central portion is by far the largest and most important, lending itself readily as it does to the construction of a great monumental group of buildings. The lands to the west form the natural approach to that group, separating it slightly from the town and giving it seclusion and distinction. The hills to the east form a majestic natural background and climax to the composition. Finally, to the south, just aside from the path of learning, yet closely joined thereto and playing its own part in the most just relationship with the main motive of the University, lie the broad fields destined for athletic sports.

In terms of the human habitation we see in the four portions of the grounds, as above defined, the House with its Forecourt or Garden to the west, its secluded Retreat and Promenade to the east, and its Playground and Field for Sports to the south.

IV.

The question of the grouping of the buildings by departments so that there shall be perfect convenience of access and intercommunication between the different parts of the University is an extremely important one, and is in reality quite a different subject from the question of artistic

grouping, though necessarily the two must be studied together.

Perhaps the most important point to be considered is the position to be selected for the Library. This is in a peculiar degree the intellectual center of the University, and it should be almost equally accessible from each and every department. In order that the distances to be traversed between the various buildings and the Library be the shortest possible, it seems essential to place it as near as possible to the absolute center of the entire group. In nearly all the plans for great seats of learning which have been developed within recent years, the Library has been given this central situation, notably at Columbia University, where it forms the dominant architectural feature, immediately around which are all the other academic buildings. The advantages of such a position are too obvious to need explanation.

The position to be selected for the Library at Berkeley has been more seriously considered, perhaps, than any other single question relating to the plan, unless it be the main axis. Numerous locations have been suggested. The Bénard plan proposed the site immediately above Oxford Street and adjoining Hearst Avenue. Artistically this plan has some advantages. The Library, on account of its size and the importance of its rôle, will necessarily be one of the most impressive and beautiful buildings to be erected here, and it would unquestionably give a fine effect to come upon it immediately after entering the precincts of the University. The ground at that point is, moreover, comparatively level and easy of development. It must, however, be evident that this site can never be central, and, in fact, that the more the University grows, the less central that site must become. The University cannot grow to the west or north without overstepping its own boundaries. Only to the east and southeast can it expand. It would seem, therefore, to be a short-sighted policy to place the Library in the extreme northwestern corner.

The site in front of the present Library is in many respects an admirable one for a permanent building, and has been very seriously considered for the purpose. It is a central, high and commanding location. It has the advantage, slight though it be, of being near the present building and not violating the formed habits of the University community. The disadvantages of this site are the difficulty of arranging the building at this point in such a way as to preserve the main lines and vistas of the general composition, and the comparatively small area of land suitable for future expansion. To the north there is an uninterrupted space, but to the east and south the territory is much limited by the nearness of the cañon.

It has been suggested that the Library be placed at the crossing of the central avenue and the easterly cross-axis. This situation would be convenient, but it possesses no other real advantage, for the crossing of these two axes lies in the hollow immediately south of the present Mechanics Building, and few portions of the ground are less well adapted than this for the placing of a large building, even were one to leave out of consideration the fact that such a position for the building would entirely destroy the fundamental idea of the adopted plan.

On the whole, everything seems to point to the ground immediately west of North Hall and south of the Botanical Garden as the most advantageous position for the Library Building. This is the geographical center of the portion of the property readily adaptable to building operations. It lies midway between the two cross axes, each of which is the central line of a great group of buildings. This site has other advantages than that of centrality. It is a prominent, slightly spot facing the central avenue or esplanade, and a building placed here would give an exceedingly fine architectural effect. The entire tract of land south of the building as far as the creek is utilizable for future additions to the building,—no small advantage, for the history of universities shows that the Library should be placed in a

position where it has the opportunity for almost indefinite growth. The Humanities group of buildings, that is to say, Belles-Lettres, Languages, History, Jurisprudence, etc., would be arranged immediately about the Library to the east and west. The western group would occupy then the area now given over to the Football Field.

The Library is too important a building to be placed on one side of the main esplanade without a balancing mass opposite. The Museum seems to be its natural pendant, and the site immediately opposite the Library, namely the knoll now occupied by the Observatory, seems in every respect an ideal site for such a building. About it would be grouped the various departments having to do especially with the treasures contained therein. If the Museum is to be devoted to Art, Natural History and Ethnology combined, the buildings housing these branches would be grouped about it in the most logical and convenient sequence. The detail of this arrangement is, of course, something on which much study and thought will have to be expended. A possible arrangement would seem to be the placing of the buildings of Agriculture, Botany, etc., on one side,—perhaps to the west, where they will be in immediate connection with the Botanical Gardens and Agricultural Field; and those of Geology, Mineralogy, etc., to the east, where they will be of easy access from the new Mining Building. A favorable location for the permanent Mechanics Building is on the rising ground directly north of the present building. A good location for Chemistry would be as a pendant to Mining, south of the main axis. The long esplanade traversed by the eastern cross axis might be developed for the use of Mathematics, Physics, Civil Engineering, etc. The Fine Arts section should be near both Museum and Library, and a site on the high ground near the President's Mansion seems entirely suitable for this building.

These suggestions for sites of the various departments of the University are of course tentative, and subject to

changes throughout. Other and better suggestions may be made as the studies progress and new light is shed upon the problem.

There probably has never been a finer opportunity for the creation of a great institution, not only in its aims and educational advantages, but also in its outward aspect, than is ready to our hand on this beautiful site. The astonishing growth of the University of California within recent years has been one of the marvels of these marvelous times and of this marvelous country of ours. It is unavoidable perhaps that architectural setting should lag behind other forms of intellectual development. But there is danger of ignominy if such setting lag too far behind. There comes a time in a University's career as in an individual's when it must recognize that *noblesse oblige*. There are certain proprieties which it is unworthy of a successful institution, as of a successful man, not to observe. Good buildings are like fresh linen,—a sign of self-respect. Like a growing boy full of lustihood the University must learn its architectural manners,—outward grace, with its inward strength. The time has come for the University to take on an aspect commensurate in dignity with its importance intellectually and socially.

But above and beyond any of the considerations which have been enumerated, is the principle that it is owed to the people to establish on these grounds a standard of artistic excellence. It is the University's bounden duty to cultivate artistic ideals just as distinctly and indisputably as it is its duty to teach the beauties of literature and the wonders of science. The University fulfills only a part of its mission when it teaches the theory of beauty without its practice. Its duty is to inspire, to cultivate, to edify. And to do that completely it must have fine buildings. By fine is not meant elaborate or even costly, but buildings whose lines are so pure and whose aspect so beautiful that the student coming into their presence is uplifted and his ideas enlarged

and purified. Men and women come here at the most impressionable period of their lives, and lost is the most important of opportunities for raising the standard of their taste and cultivating their higher instincts, if they do not find themselves at once in an atmosphere of fine artistic surroundings.

In these days it hardly needs argument to convince people of the value of good art. That a fine architectural setting has a direct commercial value to an institution, is something which has been learned through actual experience by older communities, and it will be learned here, too. All over the country great commercial bodies, insurance companies, banks, railroads, etc., as well as cities and states, are learning the lesson that beautiful surroundings pay. They bring people; they hold people, and keep them straight. They stand for the honor of the bodies so sheltered. The United States Government, too, has waked to a realizing sense of the necessity of having its public buildings truly representative of the higher aspirations of its citizens. The University of California must not be outdone; all of its friends should vie with one another to make its aspect as fine as its heart is true and its head sane.

So one of these days the University shall take on incomparable beauties and stand as an exponent of all that is best in life. So shall the vision become reality, and California beacon the world with bright accomplishment.

LAYING OF THE CORNER-STONE OF THE HEARST MEMORIAL MINING BUILDING.

Wednesday, November 19, 1902, was a memorable day in the annals of the University of California. On that day took place the formal ceremonies of the laying of the corner-stone of the Hearst Memorial Mining Building, an event which marked the opening of the promised era of splendid buildings and adequate equipment. A heavy down-pour of rain interfered with the comfort of the spectators. The ceremonies were brief and simple. Early in the afternoon the guests of the University, including delegates from the Pacific Coast Miners' Association, then in session in San Francisco, members of the faculty, and students of the College of Mining, the latter in miner's caps, overalls and jumpers, gathered in the court of the Mechanics Building, and shortly before three o'clock formed in procession and marched to the new Mining Building. On the hillside east of the corner-stone a stand had been erected to accommodate about seven hundred people, and into this non-commissioned officers of the cadets ushered the invited guests, officers of the University, and mining students. Another stand accommodated the Glee Club and members of the press, while all around stood other spectators braving the inclemency of the weather. At the foot of the main stand, partially sheltered by a canopy of canvas, was the speaker's desk, and near at hand a derrick held suspended the large granite corner-stone.

The exercises were opened by Professor Martin Kellogg, ex-President of the University, who offered the invocation, in the following words:

"O Thou who art the Father of our spirits, the Lord of all life and Author of all blessings to the children of men; we acknowledge Thee as the Giver of every good and perfect gift.

"Thou hast spread abroad the fair regions of the earth, to be the abode of the human race. For our welfare and prosperity, for our means of advancement in the arts of civilization, and in the knowledge of Thy wonderful works, Thou hast stored hidden and exhaustless treasures in the earth, of gold and silver and all precious and useful mineral wealth. Therefore must men 'put forth their hands upon the flinty rock and overturn the mountain by the roots,' and the 'things that are hidden' must they 'bring to light.'

"We thank Thee for the new opportunities for such service to the world which are to be offered here. Accept, we beseech Thee, our dedication of the Hearst Memorial Mining Building as a new temple of science and the industrial arts. May it rise to stand for many centuries as the home of scholarly training and beneficent research, in which the thoughtfulness of our Maker for His creature man may receive an ever fuller and more reverent interpretation.

"Let Thine especial blessing rest upon the generous founder, that blessing which 'maketh rich and addeth no sorrow therewith.' May she live for many happy years, to rejoice in this completed gift for so noble a purpose. Bless all who coöperate with her in the execution of her plans; the architect and his aids, and all the workmen here engaged,—till in due time, without disaster or accident, these solid walls, fitly framed together, shall stand in symmetry and beauty to grace our University home.

"Let Thy favor abide with the whole University; with its officers of administration and of instruction, with its students and its benefactors; with all the citizens of our beloved State."

The audience then joined in singing the hymn, "Ein' feste Burg ist unser Gott," under the leadership of the Glee Club.

President Wheeler then delivered an address, speaking as follows:

"The act which we perform here today marks the decisive step in the erection of a memorial to one of California's most highly honored and best beloved men. He belonged to a day when there were giants in the land, and that day he fitly stands to characterize and represent,—stalwart, large-souled, open-handed, impatient of narrowness, fearless of risk. He built up and tore not down, he discovered and hid not away, he prospered and filched from no other's store, the structure of his wealth he reared on the wrecks of no man's fortunes. He opened paths by which individuals and communities entered in unto abundance. What came to his own hand he held, as the wisely rich will ever do, rather as steward than as eternal possessor. To the cry of need his ear was not stopped; to the vision of a public meaning for life and a public responsibility for wealth his eye was not closed.

"The peculiar form of the memorial which is here to be erected to him is due to the choice of his wife, confirmed by the approval of his son. It will be appropriate and it will be worthy. It assumes first of all the form of a bounteous gift to the State,—to the State within whose borders the keenest activities of Mr. Hearst's life were exercised, to the State under whose shelter his fortune was assembled and solidified, to the State which honored him with a most dignified office and confided to his keeping most important trusts. It assumes in the second place the form of a contribution to the service of that technical profession of which he was one of the earliest and one of the most skilful practitioners. Its mission will be to raise and liberalize that profession by freeing it more and more from slavery to the rule of thumb and the wastes of amateurism, and placing it ever more and more under the rule of intelligence and within

the sovereignty of reason. It assumes in the third place the form of a largess to the public school system of the State, a system which offers to the children of the State from every level of condition and estate the free opportunity to shake themselves loose from the bonds of tradition, class and birth, and rise to the place their industry and native worth may rightly claim for them, even unto leadership among the sons of men. And last of all this memorial assumes the form of a benefaction to society, a production of the social weal. Out of the seething ebb and flow of shifting public interest, in the midst of the vain and transient cries of market-place and forum, rise the solid walls, the stern, clean pillars of the University, to vindicate in the name of that assembled and clarified knowledge we call science, of that harmony of form we call art, and of that digest of experience we call history, the steadiness and order of human life, and to proclaim that man liveth not by bread alone and that it is the things of mind and spirit which are eternal.

"The building which is to rise here will be dedicated to the use of the College of Mining. It is to be built of the strongest and cleanest stone produced out of the California hills. When completed it will be not only the largest but the most completely equipped building devoted exclusively to the study of mining engineering in the world. The plan of the building has been devised after long and patient study by the Supervising Architect of the University, Mr. John Galen Howard, who has worked in constant conference with Dr. Samuel Benedict Christy, the Dean of the College of Mining. Between them these two men have visited nearly every mining and technical school of rank in the Old World and the New.

"'The exterior treatment,' to quote Mr. Howard's own words, 'is of an extremely simple, dignified character, based upon the classic tradition, but strongly influenced by the naif and charming work of the Spanish Fathers in this land, and like that work depending largely for its effect upon the

careful proportioning of its voids and solids and upon its low roofs of heavy terra cotta tile overhanging broad unornamented surfaces of wall.'

"The building will be adequate for all needs of the department for decades to come. It is so planned, however, that it can be indefinitely enlarged without sacrifice of symmetry or beauty. Moreover, the greatest elasticity will mark the interior plan. The framework is of steel, the floors are wholly independent of the interior walls, and flues for furnaces, hoods, heating and ventilation are provided in large number.

"The chief entrance, in the center of the south façade, opens into the Memorial Vestibule and Museum, a lofty room, measuring forty by eighty-eight feet, rising through three stories, and surrounded by balconies at the level of the second and third floors. Light will come from three arched windows, seventeen feet broad by twenty-eight feet high, on the southern side, and from three circular domes, fifty feet above the floor. The room will be paved with marble and finished in buff pressed brick.

"The administrative department, with public and private offices for the Dean, will open at the west of the Memorial Vestibule. On the east will be a lecture room, and an office for the curator of the museum. At the right will rise marble stairways, in double flights, leading to right and left.

"The general mining laboratory will open on the central axis, forty-six by one hundred and eighteen feet, open to the roof and lighted from above. A traveling crane will provide for the moving of heavy mining machinery. Broad galleries at the height of the first and second stories will serve as corridors and as vantage points for viewing mining operations.

"In the east wing there will be metallurgical laboratories for juniors and seniors, in the west wing research laboratories, and in the central northern portion of the building a dry-crushing tower, three stories high. The tower will be

flanked by two rooms, forty by sixty-two feet in size, one to be used as a smelting room for copper and lead, the other for a gold and silver mill. On the second floor, opening from the gallery of the Memorial Vestibule, will be two lecture rooms, one forty by forty-two feet, the other twenty-four by forty-two, and a private study and drafting room for the Dean. On the third floor will be a library and stack-room, and an attic room for drafting, photographic work and other purposes. Adjoining each lecture room or laboratory will be a private study for the instructors.

"In the basement there will be two large locker-rooms, each provided with shower baths; forge rooms, heating and ventilating apparatus, a carpenter's shop, store-rooms, and janitor's quarters.

"An analysis of the motives expressed in the Mining Building is given by Mr. Howard in the October number of the University of California *Magazine*, in language whose exquisiteness of touch is not likely to be outmatched even in his fine treatment of the materials native to his art.

"'The aim has been to give expression to the character of a College of Mining Engineering,' says Mr. Howard, 'as distinguished from one of Art, Letters, or of Natural Science. The expression of belles-lettres in architecture demands a more purely classic character than that of scientific studies. Such a building as a Library, for instance, may without inconsistency rejoice in all the sumptuous glories of Roman architecture or the Renaissance; the tradition of the world leads one naturally enough in this direction. But the architect conceives that such delicate and highly organized motives find little place in a Mining Building, which demands a treatment, while no less beautiful, much more primitive, less elaborately developed in the matter of detail, less influenced by the extreme classic tradition either as a canon of proportion or as an architeconic scheme. The profession of mining has to do with the very body and bone of the earth; its process is a ruthless assault upon the bowels of the world, a contact

with the crudest and most rudimentary forces. There is about it something essentially elementary, something primordial; and its expression in architecture must, to be true, have something of the rude, the Cyclopean. The emotion roused must be a sense of power, rather than of grace. Even the scale of materials, the blocks of stone of which the walls are built, should be bolder and more strongly masculine than that of any other structure likely to find a place in a great university. To produce a design for a Mining Building which shall in all sincerity express its purpose and at the same time shall harmonize with future buildings quite as sincere in the expression of their purposes,—purposes in almost every case of greater amenity,—this has been the aim of the architect in approaching his task in its artistic phase. If in its treatment he shall have secured an outward and visible expression of the inward and spiritual organism of the building, and if at the same time he shall have succeeded in throwing over it a degree of charm which shall make it seem a kind, bluff brother amid a bevy of lovely sisters, he will feel that his efforts have not been wholly in vain.'

"This, then, is the memorial we found to-day, a better memorial and more lasting than the pyramids that Cheops reared; better, because it stands to help the life of men toward better things; more lasting, because it grafts itself upon the richest, warmest blood of the generations, and looks toward fruitage in the life of all the days to come. And the measure thereof no man can reckon. Here let it stand to tell of a virile character that struggled with Nature and rude beginnings and struggling, won; but blended in the message must ever lie the reminder, though she wills it not, of a gentle woman whose thought went forth unceasingly toward others and others' good."

President Wheeler then announced that the box which was placed inside the corner-stone of the Hearst Memorial Mining Building contained the Prospectus, the Programs, and the Report of the Phœbe A. Hearst Architectural

Competition; the October University *Magazine*, containing an article by Mr. John Galen Howard, the Supervising Architect of the University, on the Hearst Mining Building; an invitation to the laying of the cornerstone; a program for the day; "The History of the University of California" by Professor William Carey Jones; the "University Register" for 1901-02; the current "University Calendar"; the *Californian* of November 18th; a complete file of the publications of the Mining Department of the University of California, including papers by Professor Samuel Benedict Christy, Dean of the College of Mining, on "Quicksilver Reduction at New Almaden," "Quicksilver Condensation at New Almaden," "Losses in Roasting Gold Ores," "Growth of American Mining Schools," "The Solution and Precipitation of Cyanide of Gold," "The Electromotive Force of Metals in Cyanide Solutions," "Biographical Notice of Professor Joseph LeConte," and a paper by Assistant Professor E. A. Hersam entitled "The Tri-axial Diagram in Slag Calculations"; an engraving of Senator George Hearst; a clipping from the Oakland *Saturday Night* reprinting an editorial from the Oakland *Tribune* of November 10th, entitled "A Great Memorial"; a certificate for one hundred shares of stock in the Hearst Mining Company; a medal by Roty commemorative of the Hearst Competition; a gold dollar; a gold quarter-dollar; a medal made in honor of the laying of the corner-stone bearing the inscription "To the Friend of Humanity, Phoebe A. Hearst, That God Bless You and all Your Works is the Prayer of Your Devoted Friend, Matilde L. Barreda. Berkeley, Cal., November 18, 1902"; the UNIVERSITY CHRONICLE for October; the *Examiner* for November 18th; *Sunset Magazine* for October, 1902; a copy of the "Catalogue of Officers and Students for 1902-03"; the President's Report for 1900; the Secretary's Report for 1901; the "Announcement of Courses for 1902-03"; the Commencement Program for 1902; and a photograph of an elevation of the Building and the detailed plans as drawn by Mr. John Galen Howard, Supervising Architect of the University.

President Wheeler then exhibited a silver trowel which had been made for the occasion and presented to Mrs. Hearst by Mrs. C. E. Anthony. Mrs. Hearst accepted the trowel, and with it spread the mortar upon the stone. Her son, W. R. Hearst, then took the trowel and smoothing the mortar with it, handed it to President Wheeler. John Galen Howard followed the President, and then replaced the trowel in its case. Turning to the audience, Mrs. Hearst addressed them as follows:

"This corner-stone is laid in honor of an earnest student of mineralogy, a practical miner—a man who measured men by their truth, and methods by their honesty.

"It is our sincere hope that the department work of the Hearst Mining Building will add to the world's scientific and practical knowledge, and that students may be here inspired to realise the highest ideals of labor."

The signal was then given and the corner-stone was slowly lowered into place. The exercises closed with the singing of "America" by the assembled company, and hearty college cheers were given for Mrs. Hearst, W. R. Hearst, President Wheeler, Architect Howard, Professor Christy, and the new Mining Building.

RELATIONS OF ETHICS AND ECONOMICS.*

By CARL C. PLEHN.

*The root of all normative sciences is ethics, the science of the will par excellence. * * * * * Beside these greater normative sciences, there are the subordinate ones of economics, * * *. PALMER, Field of Ethics, pp. 32, 33.*

The associations of sciences,—the company they keep,—like the associations of men, often throw light upon their character. Adam Smith is, with a certain propriety, although, of course, not with strict accuracy, often spoken of as the "Father of Political Economy." With the same propriety, although with no greater accuracy, Ethics may be given the title of the "Mother of Political Economy." Nourished for many years at her bosom, kept for many years in her leading strings, this lusty son broke away in early manhood, only to fall, as many another son has done, into bad manners. But when he grew to maturity he gradually awoke to the knowledge that the gentle teachings of his mother were after all the best guides for a useful life.

Adam Smith was professor of moral philosophy and regarded political economy as one of the four main divisions of that subject, of which ethics was another. The same association was continued, in many of the great centers of instruction, and has only recently been generally broken off. In the Scotch, English, Irish and American universities it has been one of the commonest occurrences for political

*An address delivered before the Philosophical Union in November, 1902; forming a part of the discussion of Palmer's "Field of Ethics."

economy to be taught by the professor of philosophy in conjunction with ethics. Francis Wayland, for example, made but a formal separation of the two. "The principles of political economy," he says,* "are so closely analogous to those of moral philosophy, that almost every question in the one may be argued on grounds belonging to the other."

The association of disciplines by teachers and scholars may, of course, be purely accidental, and it would not be safe to argue from it a necessary or logical connection in subject matter. The mere fact that Simon Newcomb was at once a master of astronomy and of political economy would never lead us to conclude that political economy was, as a science, intimately related to astronomy, even if we did not have Jevons's delicious bit of irony, in the sun-spot theory of industrial depressions, to warn us from such an inference. But the fact that so many of those great teachers who have thus brought ethics and economics into association, regarded them as closely related sciences cannot be a mere accident. An examination of the ethical views held by leading political economists and of the extent to which these views have moulded their opinions in the more virile science, may teach us something of the nature of the relation which exists between them. Every great philosophy in modern times has had its economic exponents, and every school of economists has had more or less clearly defined ethical views.

The glory of Adam Smith's "Wealth of Nations" has eclipsed, save among his own contemporaries, the fame he acquired by the publication of his "Theory of Moral Sentiments." It is unnecessary for the purposes of this paper to pass judgment upon the merits or demerits of Smith's theory of ethics; nor, for that matter, upon any of the ethical theories which may come under our observation. It may be true, as McCulloch says of this work, that "several, and it is now generally admitted, some unanswerable objections have been urged against this very ingenious

* Elements of Political Economy, 1840, p. iv.

theory;”* or it may be true, as the same author also asserts,† as late as 1849, that “whatever opinion may be entertained with regard to the truth of the leading principles which it involves, the ‘Theory of Moral Sentiments’ is incomparably the best, or rather it is the only great ethical work in the English language.” The “Theory of Moral Sentiments” is now an almost forgotten work and Smith’s fame rests solely but securely on his “Wealth of Nations.” Nevertheless the views which Smith has expounded most clearly in the “Theory of Moral Sentiments” exercised a profound influence upon his scientific views, and through them upon the economic thought of the last century. In time again these views must, if they have not already done so, reflect from economic to ethical thought. It is therefore well worth while to delve for a moment in this neglected volume.

The “Theory of Moral Sentiments” is based on the principle that sympathy forms the real foundation of morals; that we do not immediately approve or disapprove of any given action, when we have become acquainted with the intention of the agent and the consequences of what he has done, but that we previously enter, by means of that sympathetic affection which is natural to us, into the feelings of the agent and of those to whom the action relates; that, having considered all the motives and passions by which the agent was actuated, we pronounce with respect to the propriety or impropriety of the action, according as we sympathize or not with him; while we pronounce, with respect to the merit or demerit of the action, according as we sympathize with the gratitude or resentment of those who were the objects, and that we necessarily judge of our own conduct by comparing it with such maxims and rules as we have deduced from observations previously made on the conduct of others.

* Life and Writings of Adam Smith, in McCulloch’s Fifth Edition of the “Wealth of Nations.”

† Ibid.

"Whatever judgment," says Smith, "we form with respect to our own motives and actions, must always bear some secret reference either to what are, or to what, upon a certain condition, would be, or what we imagine ought to be, the judgment of others. We endeavor to examine our own conduct as we imagine that any other fair and impartial spectator would examine it. If, upon placing ourselves in his situation, we thoroughly enter into all the passions and motives which influenced it, we approve of it by sympathy with the approbation of this supposed equitable judge. If otherwise, we enter into his disapprobation and condemn it."*

Not only is the "Theory of Moral Sentiments" seldom read, but judgments passed upon it are often based upon misunderstandings of its purport. Thus Dr. Martineau says of it, somewhat jestingly, "the operation of this law," (*i.e.* that of fellow-feeling) "has been traced with fascinating ingenuity and subtlety by Adam Smith in his 'Theory of Moral Sentiments': only he has done such execution, on all sides of human life, with his borrowed feelings, as apparently to dispense with the originals, and, unlike a king of political economists, to set up his psychological bank on paper without gold. It is no less impossible in Ethics to resolve moral sentiment into sympathy, than in Optics to treat of reflection of light without any incidence."† The unfairness in this criticism arises from the fact that it misstates Smith's position. The "Theory of Moral Sentiments" opens with the clause: "How selfish soever man may be supposed." Thus it gives at the outset the "originals," the "gold" in reserve, and shows the "incidence." Moreover, he never forgets "conscience," "the great inmate of the breast, the great judge and arbiter of conduct." The object of the book was to discover and explain the origin of the *individual* sentiments of propriety, merit and demerit, and the *social* sentiments of justice and benevolence; or the

* "Moral Sentiments," part iii, chap. I.

† Martineau, "Types of Ethical Theory," II, p. 172.

social sense of duty and the individual sense of virtue and prudence. The following citation will serve to make this clear:

"Concern for our own happiness recommends to us the virtue of prudence; concern for that of other people, the virtues of justice and beneficence; of which the one restrains us from hurting, the other prompts us to promote that happiness. Independent of any regard either to what are, or to what ought to be, or to what upon a certain condition would be, the sentiments of other people, the first of those three virtues is originally recommended to us by our selfish, the other two by our benevolent affections. Regard to the sentiments of other people, however, comes afterwards both to enforce and to direct the practice of all those virtues; and no man during, either the whole course of his life, or that of any considerable part of it, ever trod steadily or uniformly in the paths of prudence, of justice, or of proper beneficence, whose conduct was not principally directed by a regard to the sentiments of the supposed impartial spectator, of the great inmate of the breast, the great judge and arbiter of conduct."*

Attention has often been drawn to a supposed contradiction between the views expressed in the "Moral Sentiments" and those of the "Wealth of Nations." "One would hardly suspect from the former work," says Wundt, "the standpoint which the writer assumes in the latter. As a political economist, Smith makes the chief motive of human action to consist in prudent calculation, guided by egoistic interest; as a moral philosopher, he bases his whole (*sic*) theory on the feelings," (Is not selfishness a "feeling"?) "and among the feelings he makes altruism supreme."† The citation we have just given from Smith shows the error involved in this contrast. Even if "sentiment" could be properly translated into the German as "*Mitgefühl*," it could scarcely come back into English as "altruism," and would in that sense apply, if at all, only to the second of Smith's groups of virtues, justice and benevolence. But by sympathy Smith means, not pity or compassion, but "fellow feeling with any passion whatever."‡ It is as colorless as the later economic terms "sacrifice," and "abstinence."

* "Moral Sentiments," conclusion of part 6.

† From the English translation of Wundt's Ethical Systems, II, p. 79.

‡ "Moral Sentiments," Stewart's edition of 1812, p. 5.

It should now be clear how these things grouped themselves in Smith's mind. His "Wealth of Nations" was to explain the operations of prudence, a virtue based on enlightened selfishness; his "Moral Sentiments" dealt mainly with benevolence, while justice was his theme under jurisprudence. These three, together with his Natural Theology, which was never fully developed, constituted his system of moral philosophy.

I digress here for a moment to call attention to the fact that one of the most striking characteristics of all Smith's work is that it is cast in the mould of a descriptive or positive science. It is presented as a body of systematic knowledge concerning what is. There is scarcely an "ought to be" in the whole of his writings, save when it is guarded as in such a phrase as "what we imagine ought to be." His books might, with perfect propriety, bear upon their title-page the motto of Dunoyer, "*Je n'impose rien; je ne propose même rien; j' expose.*" This is strikingly true of the "Wealth of Nations." I will quote, for the single illustration of this point, Smith's own expression of what has usually been regarded, although probably incorrectly, as the fundamental philosophical thought of the book; the principle which has most often been given *normative* expression and moulded into practical maxims for the guidance of statesmen in the application of this science to the art of government. It would be natural to suppose that at this point, if anywhere, Smith would have dropped consciously or unconsciously into the forms and phraseology of a normative science. That now famous passage containing the phrase, "led by an invisible hand," occurs in the chapter on the restraints of trade, the general effect of which upon the reader is to enforce the conclusion that such restraints are to be eschewed. It is therefore normative in effect, but in treatment the whole chapter is descriptive.

"But the annual revenue of every society is always precisely equal to the exchangeable value of the whole annual produce of its industry, or rather is precisely the same thing with that exchangeable value. As every individual, therefore, endeavors as much as he can both to

employ his capital in the support of domestic industry, and so to direct that industry that its produce may be of the greatest value, every individual necessarily labors to render the annual revenue of the society as great as he can. He generally, indeed, neither intends to promote the public interest, nor knows how much he is promoting it. By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. I have never known much good done by those who affected to trade for the public good. It is an affectation, indeed, not very common among merchants, and very few words need be employed in dissuading them from it."*

"There is," says Bonar, "no reason (on Adam Smith's general philosophical principles) why human society should have been deliberately contrived by its members any more than the planetary system consciously framed by its own parts; and the pursuit of separate interests is conceived to have had a social result without any intention on the part of the separate individuals, and without any help from governments. The majority of men have common sense, and do not either miscalculate or misspend; the principle of frugality, 'the desire of bettering our condition,' 'though generally calm and dispassionate,' is born with us and lasts with our whole life, while the 'passion for present enjoyments,' the principle that prompts to expense, is on the whole momentary and occasional. This desire to better one's condition has shaped society, even when society was putting obstacles in its way. It has never had its perfect work, and the simple system of natural liberty has never been fully realized. But it has been the ruling principle of the majority of men, and its influence has been on the whole a civilizing and beneficent one."*

* "Wealth of Nations," Bk. IV, Chap. II.

† Bonar, "Philosophy and Political Economy," p. 163.

In direct contrast with Smith's positive treatment of political economy we might refer to Godwin and Malthus, whose famous controversy led to the formulation of one of the most strictly normative doctrines to which economists have held, a doctrine as much ethical as it is economic; namely: that if men will not limit their numbers by moral restraint, population will press upon the means of subsistence, and vice and misery will cut off the surplus. Even Ruskin, with all his sentimental fussiness, could offer no criticism of this rule. There is a temptation to dwell on these illustrations of *treatment*, but we must return from the digression to our survey of the ethics of different schools of economists.

For half a century or more, a controversy has raged as to whether political economy deals with man and wealth, with man in relation to wealth, or with wealth alone; a controversy which is largely one of terminology, and which has been productive of much evil and little good. But wealth has always been included, however broadly or narrowly the scope of the science has been defined. The one essential characteristic of wealth is utility. All other characteristics are more or less accidental. Value, for example, at present the almost universal expression and measure of wealth, is but an accident of history. It was therefore well-nigh inevitable that the utilitarian philosophers should have held decided views on political economy, and that a school of economists should adopt utilitarianism as the philosophical and ethical basis of its theories. There are, in fact, two schools of utilitarian economists; these may be distinguished, somewhat clumsily, in lieu of any better designations, by the terms "earlier utilitarians" and "marginal utilitarians."

Bentham, directly through his own writings, and indirectly through a host of others, but especially through John Stuart Mill, exercised a profound influence upon English political economy. "It is certainly not by accident," says Bonar, "that nearly all leading English economists, and a

large proportion of continental economists since his time, have been utilitarians when they had any philosophy at all. This applies to Ricardo, James and John Mill, Say, Sadler, Destutt de Tracy, Jevons, Cairnes, and Sidgwick."* So familiar are Bentham's and Mill's views in this connection that it will require but a few citations to recall them perfectly to all.

"Nature," says Bentham, "has placed mankind under the governance of two sovereign masters, pain and pleasure. It is for them alone to point out what we ought to do, as well as to determine what we shall do."† The gist of the theory is in his "memoriter" verses:‡

"Intense, long, certain, speedy, fruitful, pure—
"Such marks in *pleasures* and in *pains* endure.
"Such pleasures seek, if *private* be thy end:
"If it be *public*, wide let them *extend*.
"Such *pains* avoid, whichever be thy view:
"If *pains* must come, let them *extend* to few."

Among the many statements Mill has left of this side of his theory, perhaps the following is best for our purposes:

"The creed which accepts as the foundation of morals Utility, or the Greatest Happiness Principle, holds that actions are right in proportion as they tend to promote happiness, wrong as they tend to produce the reverse of happiness. By happiness is intended pleasure, and the absence of pain; by unhappiness, pain, and the privation of pleasure. To give a clear view of the moral standard set up by the theory, much more requires to be said: in particular, what things it includes in the ideas of pain and pleasure; and to what extent this is left an open question. But these supplementary explanations do not affect the theory of life on which this theory of morality is grounded—namely, that pleasure, and freedom from pain, are the only things desirable as ends; and that all desirable things (which are as numerous in the utilitarian as in any other scheme) are desirable either for the pleasure inherent in themselves, or as means to the promotion of pleasure and the prevention of pain."§

The chief effect of the earlier utilitarianism upon political

* *Philosophy and Political Economy*, p. 217.

† "Introduction to the Principles of Morals and Legislation," Chap. I.

‡ *Ibid.*, Chap. IV, note.

§ "Utilitarianism," Chap. II.

economy was to give it a certain harshness and brutality, not to say bestiality, which seemed at least to deprive it of all moral purpose and brought it into disrepute. Carlyle speaks of the "monster of utilitarianism" and the "dismal science" as symptoms of the same disease. Ruskin denounces the selfish spirit which was inculcated. Followers of Comte fell upon its method and found it faulty, and its strongest representatives were inclined to admit that the best work of the old English school, mainly destructive, was done.

Although still claiming a formal connection with ethics, never had political economy been farther away from its true teachings. A science which could presume to justify, or at least look with indifference upon, the English factory system of the earlier part of the last century; which could speak of the laborers' food as being *productively* consumed in the same manner as coal shoveled into a furnace; which dealt with "economic men" as mere money-making monkeys, living in an "economic" forest, the like of which was not upon earth, living for the sake of piling up, in unused hoards, the greatest possible quantity of wealth; which conceived of wealth without reference to human wants; such a science, if it were one at all, had too little of the human element left in it even to be suspected of a relationship to ethics.

It must be admitted, of course, that it was to a large extent an abuse of the ethical theory of utilitarianism. That school of ethics does not necessarily lead to such harsh and inhuman principles. The "marginal utilitarians" have developed on the same foundations as lofty ideals as were ever held by any economists. Sutherland has recently pointed out, in his "Origin and Growth of the Moral Instinct," that the social utilitarian theory of Ethics has nothing necessarily "low" and "sordid" about it. But somehow the earlier utilitarians missed this.

A reformation was to come, and it came out of Germany. Two men stand out preëminently as the leaders of this reformation. One is Roscher, the other Hegel. One was

the founder of the Historical School of Economics, the advocate of the comparative method; the other the prophet of "Process". One was the inspirer of a host of restless investigators, ceaselessly gathering facts in every quarter of the earth and building them into a solid scientific structure; the other, the keen analyst whose followers have, as it were, vivisected the body social and watched the blood go coursing through the arteries with every heartbeat.

Roscher owes much to Comte, more to Savigny, but as he not only suggested a new method but put it into practice and obtained thereby markedly valuable results, we may accord him the full credit so far as economics is concerned.

"The historical method exhibits itself," says Roscher, "not merely in the external form of a treatment of phenomena according to their chronological succession, but in the following fundamental ideas: (1) The aim is to represent what nations have thought, willed, and discovered in the economic field, what they have striven after and attained, and why they have attained it. (2) A people is not merely the mass of individuals now living; it will not suffice to observe contemporary facts. (3) All the peoples of whom we can learn anything must be studied and compared from the economic point of view, especially the ancient peoples, whose development lies before us in its totality. (4) We must not simply praise or blame economic institutions; few of these have been salutary or detrimental to all peoples and at all stages of culture; rather it is a principal task of science to show how and why, out of what was once reasonable and beneficent, the unwise and inexpedient has often gradually arisen."*

The effect on the science wrought by Roscher's leadership was profound. Economists tore from their eyes the cloudy glasses of vicious abstractions through which they had caught but indistinct glances of a distorted world, and saw, once more, as it were, a world full of real fields with rich crops waving in the sunlight and ripening for man's use.

* From Roscher's *Grundriss*, of 1843, Ingram's translation.

The early utilitarians had conceived that man lived solely for the making of bread; the historical school, which proudly arrogates to itself the title of "*the ethical school*," discovered that bread was made for man, who, however, does not live by bread alone. "The school", says Keynes, "explicitly calls itself ethical; it regards political economy as having a high ethical task, and as concerned with the most important problems of human life. The science is not merely to classify the motives that prompt to economic activity; it must also weigh and compare their moral merit. It must determine a standard of the right production and distribution of wealth, such that the demands of justice and morality may be satisfied. It must set forth an ideal of economic development, having in view the intellectual and moral, as well as the merely material life; and it must discuss the ways and means—such as the strengthening of right motives, and the spread of sound customs and habits in industrial life, as well as the direct intervention of the State—by which that ideal is to be sought after."*

Even if it were possible to dismember Hegel's theory, and to set his ethical doctrines off by themselves, which it is not, I should hesitate here to essay the task. The one thing we need to recall is that he regarded morality as the activity of a universal world-reason and that he ascribes the very highest importance to the civic and social aspects of moral life. This same world-reason, ceaselessly acting, has been the theme of all economic historians. Of the many who have been stirred by the inspiration of Hegel to attempt the "economic interpretation of history", none was more able and few have had as wide an influence as Karl Marx.

The fact that Marx became from his studies and his life-environment a socialist was an accident, detracting somewhat from his reputation among scholars in general, but in no way detracting from the value of his work as an economist nor obscuring the correctness of his point of view for

* "Scope and Method of Political Economy," p. 23.

the treatment of the industrial and commercial history of the world. We are not concerned here with Marx, the socialist; in fact, we do not sympathize with his views on this subject. It is Marx, the *economic historian*, of whom we are speaking. It is true, though, that his socialism has been a powerful medium for conveying the influence of his truer philosophy of history into wider reaches than it would ever have entered without it. What stirs the soul of the masses enters sooner or later into the consciousness of the students. Marx through his method and point of view has profoundly interested economists, and through them will probably influence historians and eventually possibly the moralists also. Marx is no easier to dissect than Hegel. His works seem to be charged from beginning to end with every kind of contradiction. Yet, as in Hegel's "process," he so succeeds in blending two opposites into a higher third principle, that what are equally false when apart are equally true when thus brought together.

Marx's theory was that economic institutions are historical categories, and that history itself in every phase must be interpreted in the light of economic development. Social relations are based on the productive organization of society. Professor Seligman has recently traced the growth of these ideas in Marx's earlier writings. Here is one of the most striking of the passages he cites: "In changing the modes of production, mankind changes all its social relations. The hand-mill creates a society with the feudal lord; the steam-mill a society with the industrial capitalist. The same men who establish social relations in conformity with their material production also create principles, ideas and categories in conformity with their social relations. . . . All such ideas and categories are therefore historical and transitory products."*

This has been called an evolutionary theory. It is more than that, however. On this basis ethics is made to rise

* *Misere de la Philosophie*, pp. 99, 100. Cited and translated in Seligman, "Economic Interpretation of History," pp. 35, 36.

from economics. Ethical doctrines are regarded as historical categories which arise out of social relations and have their roots in economic ground. Marx not only suggested a method; he used it, and to good effect. As an illustration of this method and of the results accomplished by it, I will cite a passage from near the close of *Das Kapital*, which although it was written in 1867, or before, could scarcely have been made more forceful or more true had the author lived to witness the events of the year 1902,—instead of seeing them with the prophetic eye of science.

"This expropriation [of labor by capital] is consummated through the action of the predominant laws of capitalistic production,—through the concentration of capital. Every capitalist strikes many another dead. Hand in hand with this concentration, or this expropriation of many capitalists by the few, develops on an ever increasing scale the coöperative form of industrial processes, the conscious application of science in the technical arts, the systematic exploitation of the soil, the transformation of the instruments of labor into those which are applicable by combined effort only, the economizing of all the means of production by the combined effort of associated labor, the ensnaring of all peoples in the net of the world market, and therewith the international character of the capitalistic régime. With the steady decrease in the number of money magnates, who usurp and monopolize all the advantages of this progress, comes an increase in the mass of misery, of oppression, of bondage, of degradation and of exploitation; but from this arises the revolt of the workers, a class always increasing in numbers, who have been schooled, united and organized by the very machinery of the capitalistic process of production itself. The monopoly of capital becomes a shackle upon the mode of production which sprang up and flourished under it. Concentration of the means of production and the combination of laborers reach a point where the capitalistic shell is unendurable. The shell is burst asunder. The death-knell of capitalistic private property is struck. The expropriators are expropriated."*

Contrast this prophecy, written thirty-five years ago, with a few sentences from a very sober statement in the *Review of Reviews* for November, 1902, commenting upon certain recent events. Eliminate, if you please, the special references made in this case, and see if the facts here cited do not fulfil Marx's prophecy in a remarkable degree.

* Translated from the 4th Ed. p. 728.

"Thus, combined capital presented a solid front. Local mine owners had abdicated the responsibility of direct relations with their employees, and had allowed all negotiations on their behalf to be carried on, first, by a board of railroad officials meeting in New York, and, finally, by one New York banker. Effrontery, let it be said, could not have gone farther than for capital under these circumstances to deny to plain workingmen the right, for their own protection and advantage, to form associations and deal with capital through their chosen agents or representatives. Not only was it reasonable that the coal miners should have been united in a great trade union; but it was plainly to the advantage of the legitimate owners and employers—in view of the existing situation—that this union should be recognized and dealt with. There is, indeed, far more reason for the existence of one general organization of miners in the anthracite regions than in the bituminous States, for the simple reason that the whole anthracite business has been brought under the control of a single monopoly, while nothing of the kind is true of coal-mining in the bituminous regions."

With Marx, as with Roscher and his colleagues, there is the closest possible connection between ethics and economics. Marx almost raises economics to the place of the parent science. Both would probably agree with President Hadley when he says: "He [the modern economist] would say that nothing could be economically beneficial which was ethically bad, . . . He would insist with equal force that nothing could be ethically good which was economically disastrous. . . . The economist must understand the ethical bearings of the results he discusses; the moralist must understand the economic consequences of the action which he advocates."^{*}

There remains one other great school of economists for us to review. This school represents a reaction from the extremes to which the enthusiasm of the historical economists had led them, back toward the theory of utilitarianism. It was in the main a revolt against methods rather than against any set of principles. The slow, laborious researches rendered necessary by a strict adherence to the inductive method were irksome to those who desired results quickly, and did not appeal at all to certain minds, hence a

* "Economics," p. 23.

return to deduction. The lessons taught by the failure of the earlier English utilitarians and by the sharp rebuke they had received for ignoring ethical principles were, however, too well learned to be forgotten, and this modern school of utilitarians is quite as pronouncedly ethical as the historical.

Jevons, who stood between the old and the new, treats economics as the "Calculus of Pleasure and Pain," and talks of it always as a moral science. Clark, the leading American representative of the "marginal utilitarians," is first and foremost a moral philosopher. Although he makes an apparent effort to keep the phraseology of ethics out of economic writings, yet the thoughts will appear. Opening one of his books at random, I catch such sentences as: "Economic laws depend on the voluntary action of men;" "Moral force as an economic agent is the characteristic of the new régime;" "What is ordinarily termed a good bargain is morally a bad bargain." In the Austrian branch of this school the same ethical trend is very pronounced. With them, marginal utility (Jevon's "final utility") is used as the key for the solution of all problems. We may find an illustration of their ethical views in the very heart of their theory. "Value," they tell us, "will take various forms according to the 'end' to which it is related. The end may be, directly, the well-being of man, whether that well-being be conceived of as the ideal good of humanity, or the social ideal current at the time, or the realization of an individual character, or merely the gratification of individual desire. Or the end may be some mechanical or technical result which has no direct reference to personal well-being, or at least admits of being considered, for the moment, as a merely objective or immediate result."* Or again: "Utility, and not Value, is the supreme principle of all economy; where value and utility come into conflict, utility must conquer." There is much in their theory which recalls Ruskin's dicta: "There is no wealth but life," "Value is the life-giving power of anything."

* Smart, "Introduction," p. 5.

To-day the intimacy of the association between economics and ethics is more boldly and emphatically stated by the leading economic thinkers than ever before. Marshall, for example, defines economics as "the study of man's action in the ordinary business of life; it inquires how he gets his income and how he uses it." . . . On its more important side, it is "a part of the study of man. For man's character has been moulded by his every-day work and by the material resources which he thereby procures, more than by any other influence unless it be that of his religious ideals. In fact the two great forming agencies of the world's history have been the religious and the economic. Here and there the ardor of the military or the artistic spirit has been for a while predominant; but religious and economic influences have nowhere been displaced from the front rank even for a time; and they have nearly always been more important than all others put together. Religious motives are more intense than economic; but their direct action seldom extends over so large a part of life. For the business by which a person earns his livelihood generally fills his thoughts during by far the greater part of those hours in which his mind is at its best; during them his character is being formed by the way in which he uses his faculties in his work, by the thoughts and feelings which it suggests, and by his relations to his associates in work, his employers or his employees."^{*}

So, too, the amount of one's income has its influence on character, an influence scarcely less than that of the way in which it is earned. If, as Professor Palmer tells us, the accredited notion is that ethics is the science of conduct and character, a large part of it is on Marshall's showing economic.

But all economics is not ethical. There are whole groups of principles or laws which must be considered in economics which are physical or natural. When we set nature to work for us, taking advantage with such small

* Marshall's "Principles of Economics," I, pp. 1, 2.

cunning as man possesses, of her forces and of the physical constitution of things, we join the laws of conduct with the laws of nature. This is true of all the principles of production. The raw materials are nature's gifts; and as we cannot by taking thought add one cubit to our stature, so we cannot make one kernel of wheat bear two stalks. Man may by his conduct regulate the number of his kind, but slight indeed are the variations he can purposely bring about in the proportion of the sexes. Outside of production, however, in the fields of exchange, distribution and consumption, the laws of conduct absolutely dominate, untrammeled by natural law. Our rules and practices concerning property are continually changing, and with them the economic "laws" of exchange and distribution. In no two generations has the game, by the results of which each man wins his share of the wealth of the world, been played accordingly to precisely the same rules. And in widely sundered ages the rules have been totally unlike. Indeed, so kaleidoscopic are these changes at times that they seem to be revised annually, and it is with extreme difficulty that economic science can keep up with the changes in economic life. Through all these changes runs the restless striving for betterment and for higher welfare.

In this sketchy presentation of the relation of economics to ethics I have hoped to answer, somewhat broadly, the specific question set me by your honored President, namely: whether Professor Palmer's classification of economics as a normative science* subordinate to ethics is correct or not. If ethics is a normative science, economics must be the same, for the greater part of the subject matter of economics is ethical and the greater part of the subject matter of ethics is economic.

As an economist, however, I cannot very well follow Professor Palmer in his apparent assumption that each science is either by nature normative or else by nature

* Prof. Palmer defines a normative science as one which determines what "ought to be."

descriptive. For nearly half a century economists have warmly debated the question of method in their science, and from this discussion some light on this classification may be had. From this famous controversy I draw that political economy may be treated in a descriptive, *i.e.*, in a positive or analytical manner, or it may be treated in a normative manner. In the writings of economists I find both treatments. The choice seems to be connected with that of method. Those who have made large use of inductive method have generally inclined to the descriptive treatment as well, while those who have used the deductive method have inclined to the normative treatment. In Keynes's phraseology we may study economic uniformities, or we may study economic ideals, or we may formulate economic precepts. We cannot, however, dispense with the first in either the second or the third.

To a large extent this seems to be true also of ethics. I can imagine a treatise on ethics purely descriptive in treatment, in fact I think I know of at least one such. It must be then that Professor Palmer means by a normative science one that permits of such treatment. Some sciences, like physics, are probably descriptive, *i.e.* positive, or analytical, by nature and do not admit of normative treatment. It would seem impossible for a man to distinguish between what is and what ought to be concerning the law of gravity. But both what is and what ought to be can be indicated in ethics and in economics.

This last phase of the subject does not appeal very strongly to my interest. It is too much a matter of mere terminology. The essential thing is that ethics and economics are closely related. One overlaps the other. In any rational classification of sciences you must put these two together. They belong to the same group, whatever you call the group. Economics takes cognisance of certain physical laws to which ethics gives but little attention. Ethics runs over into a realm closely related to religion which economics rarely invades. For the rest they cover,

each for its own purposes and in its own way, the same ground.

There is a certain timeliness in this discussion which gives it an interest entirely apart from the academic interest in which it originated. Most of the great economic questions of to-day, the issues which are crying out for a settlement, are ethical,—fundamentally ethical. Permit me to take an example or two of such issues, selected almost at random, and endeavor to state very briefly their economic significance,—in so doing, if I mistake not, I shall state their ethical significance at one and the same time.

The money question, one phase of which, *silver vs. gold*, we have temporarily settled, and another phase of which is now looming up on the horizon, *the limits of bank paper*, is essentially a question of justice between the debtor and creditor classes. Exact justice being impossible of attainment, the settlement should be made with the greatest possible approximation to justice. Its first settlement left for the time being a slight balance in favor of the creditor, a balance which in the gradual rise in prices, has since changed to one in favor of the debtor. Thus this economic question resolves itself into a delicate balancing of margins of justice between man and man. In this case it happens to be such elements of justice as are capable of almost exact measurement. In other cases measurement is less feasible.

The questions involved in what is known as the labor problem are many and intricate, but their essentially ethical character is apparent on the most superficial examination. Take one phase of it only,—the wages phase. As its roots run deep into the whole social fabric, it affords numerous illustrations of the points we are discussing. The first question involved is the old, old one of a "just price". For it is apparent that the employer cannot pay out in wages more than he receives for his product. What constitutes a just price has been discussed by moralists from the time of St. Augustine. It was abandoned to the economists on the apparent showing that substantial justice

would be attained by competition, under the operation of the law of demand and supply. But competition, if it accomplishes this ethical end, is itself, as Clark, Hadley, and others make it, an ethical force. In the case of monopolies it has been claimed with apparent truth that the self-interest of the monopolist leads in the long run, through the obvious advantages to him of serving the largest possible number of customers, to a more substantial realization of the ancient ideal of a just price than is attained by competition. In this case, then, largest net returns, or "charging what the traffic will bear", becomes a test of justice. Again the economic law is ethical. When the price has been determined, there arises the still more intricate question of how what is received shall be divided between the laborer and the capitalist. On one side the claim is made that the capitalist is entitled to a fair return upon his investment; on the other that the laborer is entitled to a "fair living wage." "Fair," "fair;" again this is equity, justice, ethics. The former leads to the question of what constitutes a fair investment, and opens up the whole question of the equity of private property in things the possession of which confers peculiar advantages or privileges upon their lucky owners, not enjoyed by other people. Take for an example of this the ownership of peculiarly advantageous pieces of land. To defend private ownership in this case the professional economists have been rather hard pressed on purely ethical grounds by the so-called amateurs of the school of Henry George. The appeal to history as evidence of its expediency is conclusive for the past, but less so for the future. Now that the "single-taxers" are inclined to extend their argument to all special privileges, it is harder still to meet them.

It is common to denounce the over-capitalization of industry, which means the attempt to render permanent the income derived from certain advantages more or less permanent in character. We denounce this tendency because we see that it will either raise prices or reduce wages. If the

managers of a great industry bind themselves to pay out in interest for a long period an amount equal to that which they have been winning in profits during exceptionally prosperous times, they bind themselves to endeavor to rob either the consumers or the wage-earners. A man who has juggled with his investment account in this manner cannot with a clear conscience appeal to the sacred rights of property in defense of his falsified income.

The conception of a "fair living wage" is practically the same as that of a fair price to which we have already referred. Probably it means no more than that the employer shall not take an undue advantage of the laborer. Competition, so successful when the masters are many, fails to work when the masters combine. Clearly, "collective bargaining" is safer. But if the laborers combine to obtain this advantage they sacrifice for themselves, and are likely to menace for all others, certain things which some of us count as the most cherished of our American heritages. Among these is individual freedom. George E. McNeill, "the historian of the labor movement," as he has been called, recently said: "The man who takes another man's job is held to be a traitor to his class, to his union, and to humanity." To which President Eliot very aptly replied: "Every American instinct protests against the violent prevention of a man from selling his labor where and for what he chooses to sell it, and somehow or other that laborer needs to be protected and preserved in our country."* Here are two opposing ethical theories.

Both the trusts, or capitalistic combinations, and the labor unions sin alike against another important principle upon which the health and purity of society depends, and that is the "freedom to decay." Competition eliminates the weak, the foolish, and all who do not manfully perform the duties to society which they assume to carry. Monopoly preserves them.

* Boston *Herald*, report of meeting of the "Economic Club," issue of Nov. 11, 1902,

So the "labor question" involves a myriad of moral problems which it will take the clearest, coolest heads, the warmest hearts, and the most tender consciences to solve. A guiding principle must be sought; where we shall eventually find it I do not know. Yet this essay seems incomplete without an expression of my own creed. I believe we should endeavor to preserve the greatest individual freedom compatible with social existence; a doctrine as old as Aristotle and as modern as Hegel.

"This above all: to thine own self be true,
And it must follow as the night the day,
Thou canst not then be false to any man."

Hamlet, I, 1.

THE WORK OF FRANK NORRIS: AN APPRECIATION.

By H. MORSE STEPHENS.

No one feels more acutely conscious than the writer of this Appreciation of the impropriety of selecting him to pass an opinion with regard to the work of the late Frank Norris. Mr. H. M. Wright in the last number of the *UNIVERSITY CHRONICLE* dealt with the personality of his college friend and foreshadowed the idea that another should deal with his position in the world of letters. It may be that the engaging nature described in Mr. Wright's article had so affected those who knew Frank Norris that they were afraid that personal consideration might injure the impartiality of their appreciation of his writings, and that therefore a stranger to him should have been selected to perform the task of saying something of the work of the brilliant University of California man, whose untimely death shocked and saddened all lovers of American literature from the conviction that with his life had suddenly ended a career that promised a splendid future. This article at any rate contains the impartial judgment of one who enjoyed and carefully studied all the published work of the young Californian and who had looked forward to the possibility of making his acquaintance as one of the attractions of taking up his permanent residence upon the Pacific Coast.

It may be worth while to tell how the writer's attention was first drawn to the novels of Frank Norris. It was his

habit, while a professor at Cornell University, to gather together for a weekly talk upon some subject interesting to them, a group of those students who were among the leaders in the life and thought of the undergraduate body in the University. One evening the request was made by half a dozen students for a talk on Frank Norris, and a copy of *McTeague*, which had just been published, was produced for discussion. It seemed that the book had been widely read and much disputed over among the reading men at Cornell, some of the boys being wild with enthusiasm over its vigor and others deprecating its subject. After an interval of a week or two, during which every member of the little group of twenty had made himself thoroughly familiar with *McTeague*, an evening was spent in a fierce controversy upon the lines that have been indicated. The present writer, whose aim was to encourage free and individual criticism and not to deliver an exposition of personal opinion, opened the discussion with a talk on the so-called realistic school of French novelists whose influence was so apparent in *McTeague*. In the discussion that followed it was obvious that the book had aroused the keenest interest, and that the eternal division between critics of form and critics of matter was being displayed with regard to it. From that time onward the work of Frank Norris was eagerly talked over, and it was apparent that his was a quality which appealed particularly to young minds in the formative period which felt the fresh note with a vividness at least in part obscured to older and more jaded readers of fiction. The earlier works of Frank Norris were procured and read in the light of the discussion over *McTeague*, and when *The Octopus* appeared it was triumphantly declared to be a convincing proof of the greatness of Norris by his earlier partisans. As a proof of the hold which his works obtained over this group of Cornell students it may here be added that while San Francisco was to their older companion the city of Bret Harte, it was at least to two of them, who tarried there for a day or two on their

way to China, the city of Frank Norris, the scene of *Moran of the Lady Letty*, of *Blix* and of *McTeague*. While but moderately affected by literary reminiscences of Bret Harte and Robert Louis Stevenson, they were full of interest in making out the scenes described by Frank Norris.

These recollections have their only justification in the evidence that they afford of the influence of the works of Frank Norris over young and vigorous minds, and may serve to introduce a few general considerations that arose from several lively discussions with regard to his merits. The influence of Zola and the other so-called French realists upon Norris in his middle phase, as shown in *McTeague*, is so obvious that it is worth pointing out the direction of that influence. The true realists, those who have depicted life as it really is and men and women as they really are, can hardly include Zola and his like among their number. Wealth of detail, got up with all the care of a man of science collecting and tabulating his observations, especially when the machinery of observation is plainly revealed, does not give the effect of reality, still less does it portray the truth. Painstaking as Zola, to use the most famous of these French realists for the whole school, ever showed himself to be, the obviousness of his preparation and the artificiality of his combination of the details he had laboriously acquired take away all sense of reality. The true realists, whose books are as convincing of the truth of their portraits and their scenes as the most artistic photographs, introduce their detail so naturally that it is not until the effect is analyzed that the touches of truth are seen to be in the perfection of the details themselves. De Foe and Jane Austen, for instance, are far truer realists than Zola, though they make no such parade of carefully studied detail. Frank Norris was for a time a pseudo-realist of the Zola type, but even in *McTeague* the resemblance is not complete, while in *The Octopus* the natural genius of the author has almost entirely surmounted the search after unnecessary minuteness of detail. In this latter book, as

in some of his earlier stories, he approaches more nearly to Kipling's method, the method which implies sometimes by a single word an immense knowledge of detail while refusing to obtrude that knowledge. It may be that the influence of Zola was no bad thing in the evolution of the young writer's method, for it must be remembered that training in minute observation is as necessary for the novelist who would tell the truth as for the man of science, and the oft-told story of Flaubert's careful training of Guy de Maupassant illustrates the need of such an experience before an author truly finds himself. But Frank Norris had graduated from this school in his later works, and was clearly showing at the last that he was no longer an apprentice but a master worker.

In the construction of his novels Norris shows that he had caught one of the most remarkable phases in Zola's art, and it was probably an intimate sympathy between his dramatic love of basing his stories upon the repeated influence of some particular central field of observation that led to his peculiar affinity to Zola's methods. The one marked feature of all Zola's books as apart from their oppressive detail is the way in which he works from and to his central field of observation. The descriptions of the markets in *Le Ventre de Paris*, of the Bourse in *L'Argent*, of the low-class drinking place in *L'Assommoir*, occur readily to the memory of all readers of Zola's novels, and the way in which Norris handles the dentist's office in *McTeague* and Annixer's ranch in *The Octopus* is strikingly like the method of the French master. There is no indication here, and it is a pure surmise, that the delight of the young American in one artistic feature of Zola's work may have led him under the influence of the less admirable practices of the French novelist during the period of apprenticeship. The opening chapters of Norris's last book, *The Pit*, which appeared in the *Saturday Evening Post*, led up naturally to a picture of the Chicago wheat pit in which the great scene in *L'Argent* is rivalled.

The criticism was made during the lifetime of Frank Norris and has been made in most of the summaries of his work that have appeared since his death, that he was led toward the unpleasant themes of his novels by a belief that realism meant brutality of subject and of description. It is possible indeed that affinity with what was most artistic in Zola's method above mentioned may have led him in his middle period to the unpleasant subjects in *McTeague* and *A Man's Woman*, but that he had no absorbing love for the coarse or the hideous is clearly shown in such later works as *The Octopus* and *The Pit*. It is a common error to suppose that the name realist applied to the French writers of the school of Zola refers to their subjects rather than to their treatment of them, for Zola's attraction towards the unlovely grew rather from the nature of the topics that he preferred to treat. Had Norris not been spared to write *The Octopus* and *The Pit* it is possible that his critics might have been justified in declaring him the disciple of the French realists in what was worst in the matter of their stories as well as in an approach to their method, but his later work showed that such books as *McTeague* were not the limit of Norris's aspirations. It is not necessary to go into the age-long argument as to whether vigor of style can gild a repellent subject, for the works of Norris's latest phase show clearly enough an admiration for what is good and beautiful.

The form that this appreciation has taken has been based on the many discussions upon Norris in which, as was said in an earlier paragraph, the debate turned rather upon Norris as the American writer of genius most akin to the French so-called realistic school, than upon his place in literature apart from this special consideration. Something needs to be said, however, from the general point of view. The most striking feature in the progress of his work was the growing breadth of his conceptions of the sphere of his art. His last notion of writing a trilogy of wheat had something grandiose about it. He was no miniature painter,

desirous of producing his effects by the minuteness of his workmanship, and it may not be wholly fanciful to see in him a reaction from the exquisite miniature effects successfully followed by such writers as Miss Mary E. Wilkins. The reaction against the perfection of minute work which had been steadily developing through Henry James and W. D. Howells has on the one side showed itself in the blood-splashed canvasses of Winston Churchill and Miss Mary Johnston, but in nothing so clearly as in the work to which Mr. Norris devoted his latest days. Throughout *The Octopus* there is a sense of breadth and it is not to be doubted that *The Pit* will give the over-powering sense of bigness which hangs about the transactions of Chicago, as the earlier novel did about the vast wheat fields of the San Joaquin Valley. From this point of view it would be conventional to say that the prevailing sense of great size which permeates Norris's latest work is due to his being a Western writer, just as the more restricted life of New England may be held partly answerable for the prevailing tone of the New England writers. It is easy to generalise after this fashion, for the future alone can show the truth or falsity of such generalisations, and it is more to the point to dwell upon the real vastness of Norris's ideals than to speculate on their origin. Owen Wister alone among modern American writers shows this prominent characteristic and in his case despite birth in Philadelphia. The likeness between the two might be pushed yet further, and it is not too much to say that since Frank Norris is gone, Owen Wister alone is left to realise in the future among men at present writing that sense of giant size which is so characteristic in all the fields of American polities and American enterprise.

Can it be said that Frank Norris shows in his work any special characteristic due to his life in California? That the scenes of his most famous novels were laid in California does not meet the question. The influence of provincialism in modern American literature is to be seen on every side.

The Indiana authors seem to be building a little hall of fame for themselves—in Indiana; the New England writers have long prided themselves on their fidelity to special New England standards; the South is priding itself on the birth of the new Southern literature; most States have their favorite sons in literature as well as in politics. Local patriotism may be a very good thing, but exaggerated local patriotism is gross provincialism. Now Norris was far from being a product of California in this restricted sense; no one felt or described the special charm of California scenery or California life better than he; but in no degree was he so enslaved by his native State that he could not see the larger things that make humanity. His residence in Paris, most cosmopolitan of cities, may have had some influence in widening his point of view and in preventing him from bounding his vision by purely local limits, and yet California has a right to be proud of him as one of her sons although he had the courage to look beyond her. Local critics might have the right to comment upon his special aptitude in describing Californian scenes or Californian life, but to the present writer one of the striking things that proves the greatness of our loss in losing Norris is the fact that in him California had a son who could appreciate her and yet see that she was but a part of a larger world. Though the first part of his trilogy of wheat was devoted to the California wheat fields, his subject is even there treated upon the larger scale, and it was an integral part of his purpose to follow up his first act in California with the second act in Chicago and the third in some European or Asiatic country. It is fascinating to note the part California has already played in American literature and how much that is not provincially Californian or even American she has inspired in modern literature. The living quality of Bret Harte's best work was due to more than the fact that its scenes were laid in California mining camps; the poems of Edward Rowland Sill, even when confessedly the outcome of Californian surroundings, deal with the larger problems of human

life; and Frank Norris, Californian though he was, had attained unto the greater breadth of view and thus won a place in the larger world of literature.

In a periodical published by the University of California an appreciation of Frank Norris's work written by a member of its faculty might be expected to say something of the part taken by the University in moulding the character and career of its brilliant son. And this topic might have been fairly treated by some one of those professors who had Frank Norris in their classes. His student life was adequately dealt with in the last number of the *UNIVERSITY CHRONICLE* by one of his student friends, and it would have been more fitting if one of the older professors had from the personal side undertaken the task which has here been attempted. But as was said in the opening paragraph, it was thought better by the editor to leave the duty of appreciating his work to one who had never known him. This duty has now been fulfilled, in how halting a way the writer well knows, and he can best conclude by voicing the special grief of the University of California, and adding her lament over the lost son from whose early promise she expected so full a fruition, to the universal sorrow of all lovers of literature, not only in California but on both sides of the Atlantic and wherever the English language is read, at the untimely and abrupt quenching of so fair a promise of future fame.

SOMETHING OF THE CLASS OF '80;
ROOSEVELT AT HARVARD; AND
OUR POLITICAL DUTY.*

By FAIRFAX H. WHEELAN.

In 1876, when the United States was celebrating its one-hundredth birthday, when all the glory that was America was on every tongue, when poets were issuing impassioned verse to Columbia, supreme goddess of the hour, when the Centennial was in the full blaze of its brilliancy at Philadelphia, and the nations of the world from their farthest confines had loaned the treasures of their art, and sent the wonders of their trade, to adorn and enrich the greatest display the western continent had ever known, there gathered on the campus of Harvard University, there gathered within the halls of that venerable institution of learning, the freshmen of the Class of '80. I do not mind confessing to you that some of us freshmen thought it a rather fitting climax. Certain undergraduates of the other classes were unkind enough to say later that we really never recovered from the idea. They felt that somehow we were not fittingly impressed with the age of the dear mother who had received us under her wing. In this they were in error. There could not but be for us a deep solemnity in the thought that there were over two hundred freshman classes

* Address delivered at the University Meeting, September 26, 1902.

behind us. What mind could survey such a spectacle unmoved?

Out into the depths of the vanished years stretched the long line of freshmen—back to the well-remembered Sunday when the *Constitution* anchored in Boston harbor and set all the bells of the town a-ringing with the news that Captain Dacres was a prisoner on board, and the *Guerriere* was at the bottom of the sea; back to the days when the Continental troops were quartered in the academic halls; back to the times when witches were burned at Salem; back to the days of the Narragansetts and the Wampanoags and the first freshman class. Small wonder it is, if there was for us a proud inspiration in the thought that we were to have for one year the honor of leading that imposing line of freshmen classes.

As I look back now, another thought is forced upon me. Great changes had taken place since first that line began. Indians had given way to the settlers. The colony had become a State. The wigwam had been replaced by the log hut, and the log hut had been changed for tall houses and great mansions and imposing churches; but the quality of the freshmen had remained the same. Every glimpse you catch of them in history, every mention of them in the college annals, identifies them with to-day. Ever the same—ready of mind and quick of heart, high in purpose, ambitious in ideals, eager to show themselves worthy of the traditions of the past, eager to assume the duties of the present, and the obligations of the future. In a word, for which our language holds no synonym, eager to be freshmen.

I am sure you can all understand how the Class of '80, even in its earliest days, seemed to us a remarkable class. We had a confidence in ourselves that would have been an ornament to old age. We nailed a large standard with "'80" on it to the top of a large flag pole in Harvard Square, and though some unfeeling and envious sophomores tore down the sacred emblem under the safe cover of the night, we still continued to believe that we had an unusual number of

phenomenal men in our ranks,—an unusual number of young men equipped with admiring families and Daniel Webster ambitions. There was, if I may be pardoned the term, a remarkableness about the unanimity of this belief. Of course, we were willing to admit that the other classes had some aspiring and promising young Daniels, but somehow they didn't seem to us to be quite so "Websterish" as our fellows.

It is only fair to say that our belief in the remarkable-
ness of our class waned somewhat as the years went by.
In some strange way we seemed to grow more ordinary as
we came to know the professors better. In fact, our belief
in ourselves seemed to be strongest when we were youngest.
And, up to the very last, the Faculty and the college papers
were very non-committal, to say the least, concerning the
Class of '80. We consoled ourselves with the thought that
college papers were human—or partly so; and that even a
Faculty of one of our higher institutions of learning can—
I will not say err—but can approach error; that is a
Harvard Faculty can, though, I believe, no such admission
has ever been made. At any rate, when the college papers
bade us God-speed, as a gentleman of '81 has lately
reminded us, they could not use any stronger adjectives
about the Class of '80 than "good" and "creditable." Our
going out seemed to lack the blaze of the Centennial that
had been characteristic of our entrance. The *Advocate* and the
Crimson indulged in but little commendation; and the
Crimson frankly said, "'80 cannot lay claim to being any-
thing more than an average class." Time tells the story,—
"to-day it may well be doubted if any class graduated
within a decade of '80's commencement has cut its mark so
deeply and in so many ways upon our national life, as this
average class of '80."

In the business world, we have Robert Bacon, an all-
round athlete—now partner of J. P. Morgan & Co., bankers,
and in fact J. P. Morgan's first lieutenant, and one of the
high officials in the great Steel Trust; "Bob" Winsor, one

of the pluckiest base ball players I ever knew, a man who covered himself with glory when the nine went down to defeat—to-day at the head of the Shawmut Bank, and almost as noted an organizer of industrial combinations in Boston as Bacon is in New York; Charles G. Washburn, at the head of the great Wire Combination, and a Republican leader in Connecticut; "Billy" Gaston, President of the entire railway system of Boston, and now Democratic candidate for Governor of Massachusetts; R. M. Saltonstall, his partner; H. G. Chapin, a prominent official in the Boston & Albany Railroad; Arthur Hale, son of Edward Everett Hale, high in the Pennsylvania Railroad. In other fields of distinction there are A. B. Hart, Professor of History at Harvard; Howard Townsend, the New York philanthropist; Col. Wm. A. Pew, who led to Chickamauga in 1898 the best regiment sent there from any State; Josiah Quincy, Assistant Secretary of State under Cleveland, twice Mayor of Boston, and once Democratic candidate for Governor of Massachusetts; and H. N. Collison, leader of the Democratic forces of Boston. There are others of the class doing good work in many fields of endeavor; but at the top—worthy and glorious—we have a worthy representative of '80, a true son of Harvard, aye, of all colleges and of the people—Theodore Roosevelt, President of the United States.

It may interest you to know that with Roosevelt, Harvard has the proud distinction of leading all the colleges of the Union in the number of its sons who have occupied the presidential chair. John Adams, John Quincy Adams, Rutherford B. Hayes and Theodore Roosevelt are to her credit and to her glory. William and Mary comes next with Jefferson, Monroe and Tyler. Princeton has Madison; Bowdoin, Pierce; West Point, Grant; Williams, Garfield; Union, Arthur; and four other colleges have one each. Are we not confronted here by a fact of great significance—a fact that cannot but thrill us all with pride—that out of the twenty-six men who have filled the highest office in the

gift of the Republic, sixteen, or over sixty per cent., have been college-bred men?

I would like to tell you something of Roosevelt at Harvard. And first of all, I want to say to you that he is the best example of a "self-made" man that I know of. When we talk about a "self-made" man, we usually mean one that began life in poverty as a bare-foot boy, and by natural ability and hard work amassed a great fortune. But there is a self-making of greater importance than the mere making of money. There are qualities of mind and heart to be made that far out-rank in value all the treasures of Ormus and of Ind.

Let me show you something of Roosevelt's self-making. He came to college a stripling of about the average height, slim of build, with narrow shoulders, and rather flat of chest. He was not naturally muscular, and weighed only one hundred and thirty-five pounds. He was very near-sighted, and when he boxed he used to strap a large pair of glasses to his head. He is the only man I ever knew who would take the chances and box with a pair of glasses astride his nose. He was a very energetic boxer and used to go into his opponent in such a lively manner that I am sure if his opponent were asked to-day to describe Roosevelt's method of boxing, he would say that while it lasted it was a very fair sample of a "strenuous life". He was in boxing what he has since proved himself to be in war and politics—a great leader. But about his self-making. From this slim youth, narrow of shoulders and flat of chest, by hard, serious, faithful, work he made himself a large-chested, broad-shouldered, robust, muscular man—able to do a man's work and play a man's part on a cattle-ranch, on the battlefield, or in the White House. Again, when he came to college he was not noted for any marked literary ability. We came to know that he could do good, honest work, but the class did not expect much literature from him in after life. But by the same hard, serious, faithful work he achieved literary excellence, and has been able to give to the world a

very considerable amount of good work of high quality and value.

Again, when he came to college he could not make an effective speech. His ideas seemed to come too rapidly for his powers of utterance. At the first meeting of our freshman class, he made a little talk in support of one of the candidates for class president. He was evidently much excited, and he sputtered and stammered in an almost unintelligible way. He appeared as if struggling with a small but very vigorous volcano. Some of the fellows smiled and thought it funny. But just as he made himself strong when he was weak, just as he made himself an able writer when he had no great literary gifts, just so he made himself a good speaker—graceful, forceful and eloquent. This is not the sum total of his self-making; but these three achievements, happily, chanced to pass under my notice; and I say to you that even if they were the sum and substance of his endeavors, they make up a record that any man might well be proud of—a noble record—an athlete, a writer and a speaker! I am not going to deliver a sermon. The subject needs it not; but I will say that to every undergraduate throughout this land the example of the self-made man who now fills the presidential chair should be a beacon light.

Roosevelt graduated twenty-second in his class, he won but few academic honors, he delivered no commencement part, he took no prizes for English composition, he received no second-year or final honors, his only honorable mention was in Natural History, and yet within three years of his graduation, he had published his *War of 1812*, had become a member of the New York Legislature, had become the Republican leader on the floor, and was his party's candidate for speaker. Each achievement had been earned; the price of each success had been paid to the full, and paid willingly. Back of all that he was and all that he did, was the same strong, serious purpose which had characterized him at college, and the same fixed determination to take

no place in life that had not been striven for. No one ever held a clearer recognition of the fact that success is not a windfall.

To every college man in America, aye, to every man who loves his country, there cannot but be a deep satisfaction in the thought that there is now at the helm of state one who has such a worthy record of self-making behind him. We have need of more such men. We are confronted with problems unequaled in the history of man. Democracy has not yet erased the question mark. National character is in the making, and has yet to prove itself worthy of its advantages and equal to its responsibilities. We have solved some problems, and are apt to pride ourselves on our political methods, but we have not yet been successful in the government of large cities. Our failure in that regard is as conspicuous as it is lamentable. New weeds seem to flourish on our soil. Reforms clamor for recognition,—some promising deformation instead of reformation. Great trusts are forming on the one side, and great labor unions on the other. Both are taking advantage to the full of the new powers that progress has placed in their hands. New opportunities have made for old forces a new influence; forces that in the past must needs act apart, must needs act individually, are now by the advance of science and the increased powers of man enabled to organize and to act in concert; and thus have they gained a new and a greater potentiality for good or for evil.

If American progress is to continue its upward march, there will be great need of leaders in the ranks of the people; there is need that our young men be trained to assume the duties of citizenship as well as to carry on the business of life. The danger inherent in a republican form of government should be made clear to all. It is not that there is peril in America of "the man on horseback," nor yet is it probable that the Republic will change its form. Our danger is that the government will retain its form and lose its reality, that the people be free in semblance and

not so in fact. History points to the dread truth that a people may be robbed of their power and be not conscious of the theft. Great nations have prided themselves on possessing a liberty that had been their fathers', but was not theirs; have boasted about the right to cast a vote that had long since lost its meaning; have shouted themselves hoarse singing songs of freedom that were but empty nothings; have gone wild with enthusiasm as they listened to impassioned orators ascribing to the people power they no longer possessed, rights they no longer enjoyed, and virtues they no longer practiced. The past shows in no uncertain way that it is possible for a whole people to unite with deep and genuine emotion in singing a chorus about "the land of the free and the home of the brave," and at the same time neither inhabit the one nor be domiciled in the other.

The necessity that these sad truths of peoples who once were free be kept constantly in view by every American worthy of the name was never more evident, never more imperious. Throughout our land there are a number of uncrowned despots whose country is coin—not Columbia, whose patriotism lies in their pockets—not in their hearts; tyrants forming no constitutional part of the spirit or the machinery of American government,—dictating who shall fill the offices, and who shall represent the people. It is a sad, sad thing to say, but in many instances what was once the people's choice, is now commonly the boss's dictation, and those who were once the servants of the people, are now his henchmen. If the august shade of Washington were to revisit his beloved land, and were to ask us, "Who are your leaders?" and we were to answer, "We have few leaders, but many bosses," imagine the indignant light that would kindle in his disdainful eye as he exclaimed, "Bosses! *whose* bosses?" Not an American of these degenerate days would dare to answer that pure and hallowed patriot and say, "The people's bosses!" Not an American but would turn aside his head in shame and entreat the Father of his Country to hurry hence.

Liberties once encroached upon are soon lost. The antiquity of the dyke counts not against the sea. If America is to contain any freemen, outside of those blest patriots that slumber in her tombs, her citizens must give to her political affairs some of the energy that they now give to her material affairs. Liberty is a goddess that brooks no indifference. Neglect her, and she flees you. To possess her is a battle—not a dream. It is not enough to pay her feverish homage on one day in the year and neglect her for the other three hundred and sixty-four. It is not enough to parade and picnic in her honor on the Fourth of July. Such service will mean that the booming of your artillery, the rattle of your fire-crackers, the speeches of your orators, and the singing of your anthems will but echo about an empty shrine.

You who are on the threshold of political life, I conjure you to carry into it the highest and the best that is in you. Let Theodore Roosevelt be your example. Strive like him to fit yourselves for any position that may come to you. In whatever party you enroll yourselves, under whatever political banner you stand, let your sole aim be your country's good. And never fail to oppose with all the power that within you lies any uncrowned despot—any boss—who attempts to steal the people's rights or to nullify their power. Someone has said no man was ever really great who did not understand that in some sense his life belonged to his race. I believe this to be true; but be that as it may, certain it is that no American is worthy of his glorious heritage who does not understand that in some sense his life belongs to the people—that the best of his mind and heart belongs to democracy.

The hands of our clock have not yet reached the hour of despair. The Ark of the Covenant is not irretrievably lost. But we have sore need of men who are content to do their duty and to take that as their reward. We have sore need of men who will battle to the last to prevent any irresponsible boss from selecting our delegates, controlling our

conventions, naming our candidates, owning our officers or shaping our destiny. The greatest, grandest, noblest experiment of a government "of the people, by the people, and for the people" is in our hands. Shall we prove unworthy? Mankind is hanging on our fate. Thousands of years have known the night; thousands of years have waited for the day of freedom. Shall we prove unworthy in the early dawn? Tens of millions of voices answer, No! To prove that answer true, your aid is needed. Do not falter in the trust!

I have in mind some stanzas written during the dark days of our Civil War. They were written for American hearts. Their message still lives; it stirs to hope and calls to action. In the sad hours gone by these verses brought courage to many a faltering breast, and kindled a light of glory in many an eye. They were sung in many a camp by men who went forth on the morrow to die that their country might live.

"For the history yet untold,
For the future yet unrolled,
For the birthright yet unsold,
Put it through!"

"'Tis to you the trust is given,
'Tis by you the bolt is driven;
By the very God of Heaven,
Put it through!"

ALUMNI AIMS.*

By FRANK OTIS.

Mr. President and Students of the University of California:—Among my duties as President of the Alumni Association, as prescribed by its constitution, is that of bringing myself in contact with the student organizations. While I was wondering how this was to be done, the invitation to deliver an informal talk at this place arrived, and so afforded the opportunity to come into immediate contact with the largest and best of all student organizations, the student body itself.

If you will pardon the offense,—for problems of the present and of the future are those to which we should devote our greatest attention,—I will consume a few minutes of my allotted time in recounting a few interesting incidents in the early history of this University. It chanced to be my lot to enter the University at its inception and to be graduated from it in the first four year class sent forth from its portals. Thirty applicants passed the examinations for admission,—*how*, they never knew or cared,—but only twenty-four matriculated, while, at graduation, the class had shrunk to the size of a trial jury. We had a double Commencement Day,—the first day being devoted to the reading of the theses, which it was incumbent on each student to prepare as a prerequisite to graduation, and which covered various themes, from "Boiler Explosions"

* Address delivered at the University Meeting, September 26, 1902.

to the "Practical Applications of the Parabola." The second, or real Commencement Day, was held on these grounds, which were reached from Oakland by horse-car, private conveyance, or on foot,—the only methods by which one could then get to this now favored spot. President Daniel C. Gilman, in his address delivered in North Hall, said: "Although the sound of the hammer is still heard upon the walls, and the grounds are not yet graded, we have come up hither to this home of our expectations, that the Class of 1873, the first to complete a four-years' course in this University, might receive their diplomas from Berkeley, and also that a formal declaration might be made to the generous people of this State that, by their liberality, these two great college buildings have been made ready for the instruction of our youth. Incomplete as are the surroundings, the plan of these edifices is obvious; the one a costly, massive, and enduring hall, proof, it is hoped, against the inroads of time; the other, spacious and economical and in a high degree convenient, but possibly liable, at some future day, to yield its place to a more solid structure."

"The University needs at this moment the strong coöperation of all its friends. Rapid and easy transit from both Oakland and San Francisco is needed. More than two hundred persons are ready to take up their homes at Berkeley next autumn. Two hundred more would follow next spring, if the homes were provided for them. A generous gift of several acres of land and offers of at least \$5,000.00 have recently been made for a Students' Hall or lodging house, to be located near the University. I long to see the walls ascend."

My classmates and I, therefore, have been able to watch with ever increasing interest the growth and development of the University from these meager buildings, through trials and tribulations, to its present splendid proportions, from its dozen or more professors and assistants to its hundreds, from its less than one hundred students to its

thousands, and from its five colleges, with their most rigid courses, admitting of but few elective studies, to its sixteen colleges and departments with their multitude of group-electives. We have rejoiced at its marvelous expansion, and we hope to see it continue to expand without encountering any serious obstacles. We are glad to know that it is considered to be in the same class as Harvard and Yale, Cornell and Columbia, Princeton and Johns Hopkins.

The University of California must not be obstructed in its onward march of progress, and the alumni and students to-day must lend a helping hand to push it forward.

It is evident that the Alumni Association must have clear, definite, and noble objects in view, in order to accomplish satisfactory results and to induce interest and enthusiasm amongst its members. They have endeavored to define these desired ends, as well as to outline the methods to be pursued in reaching them. Their plans may be classified under three heads.

The first is a permanent object and concerns the finances of the University. The Alumni desire to supplement the work of the Regents of the University and to aid them in securing from the Legislature the necessary funds, not only to sustain the institution in its present form, but also to continue its development and to augment its usefulness. The finances of the University have been admirably managed by the Board of Regents. No set of men could have more unselfishly devoted so much time or have been more conscientious or successful in handling the large funds submitted to their management. What we now want are permanent sources of revenue, sufficient in quantity to meet steadily growing needs. It is plain that you cannot impart instruction to 2500 students at the same cost as to 1600. The University ought not to be compelled to apply to each successive Legislature for appropriations necessary to maintain it. Nevertheless, such a condition of affairs exists, and it is clearly the duty of the Alumni and of you students

to aid the Board of Regents in every way possible in securing the needful funds. We ask your valuable assistance in disseminating among the people in all parts of the State knowledge of the crowded conditions existing, of the work of the University both as to the student body and as to the solution of important State problems, and the absolute need of permanent sources of increased income, to prevent its growing usefulness from becoming impaired. Particularly, should that knowledge be driven home to the minds of those who may sit in the next Legislature. I do not believe that the people of this State will deny to public education, which has done more than any one thing for our liberty, for our enlightenment, and for the success of our institutions,—even though that education be the higher type,—all the money it may require. I believe that the time will be ripe, in the coming Legislature, for us all to do good work for our Alma Mater.

The second aim is that of effective Alumni organization,—a good machine, which will at all times do good work for the advancement of the University. I shall not weary you with a history of the Alumni Association. Suffice it to say that, like the Alumni organizations of the large Eastern colleges, it has been growing so fast as to become unwieldy. Some time ago the necessity of organization by classes became apparent, and is now being successfully carried out. The best authorities agree that the Senior Class should, in its last year, perfect its permanent organization by electing a secretary, alert, active and enthusiastic, residing near the University, who will keep the class roll and addresses, send out notices and information, and in conjunction with or under control of a small executive committee arrange for reunions at stated intervals and handle the Class funds. In addition to this, there should be assistant secretaries, also alert, active and enthusiastic, possibly with subsidiary committees, to operate from geographical centers. The permanent Class secretaries should meet at regular intervals,—a thing they can regularly do by reason

of their proximity to the University,—to interchange views and either keep in touch with or act as a nominating committee for the general Alumni Association,—the officers constituting the executive committee of the latter being the central committee which is to regulate the entire system. There can be but little doubt that such a combination would be a powerful one, and, when rightly guided and acting in perfect concert, well-nigh irresistible. Therefore, look to your organization before you leave the University, and make it as thorough as you can. You will never regret it. Incidentally, let me call your attention to a custom that existed in some of the earlier classes during the senior year, of purchasing or providing a fund for the purchase of a class cup to be given to the member's child who should first receive his degree from the University. I recall to mind that in the Class of '74, Regent John E. Budd's son was the winner. The Alumni banquet held at the time of the presentation of the cup was a glorious one in a long line of banquets. I do not know whether the custom is still extant, but if not would it not be a good idea to revive it?

The third aim of the Alumni,—an aim dear to their hearts,—is the construction on the campus of a building to cost \$100,000.00, and to serve as a social center for faculty, alumni and students. What should such a building contain? It would perhaps be good judgment to leave its complete features and uses until the actual time of erection. Those then in charge may be trusted to do the right thing. It is safe to say, however, that there will be a central reception room, reading rooms, smoking rooms, and billiard, pool and chess rooms; there will be rooms suitable for the exclusive use of women; an auditorium capable of seating over 500 people, and provided with a stage and modern accessories; a trophy room, a music room, study room, college press offices, committee and society rooms and camera club and dark rooms; there will be a café, bowling alleys, barber shop and possibly a swimming tank. The equipment will

be of the best, and everything about the establishment will be in in all respects like a first-class club house in one of our great cities, except that the sleeping accommodations should be limited to a few rooms for the use of visiting lecturers or other distinguished guests. The advantages of such an edifice are too manifest to need specification. Here would be held Class and Alumni reunions and meetings, as well as other important University gatherings. Here would come professors, graduates, and students, to mingle with one another and benefit by such social intercourse. You students would then *know* your professors. Student debates would be held and notable lectures delivered in the assembly hall. The hall would be a magnet of attraction to alumni, who would flock to the University, especially on an important occasion, in ever increasing numbers. They would thus become better acquainted with the University authorities and with each other, as well as with University affairs.

It is but a question of time when there will be constructed on the campus, without undue extravagance, a group of sensible and practicable buildings for the uses of the University,—a group of which the Mining Building, whose corner-stone is about to be laid, will be the initial structure, and of which group the State, and the United States, will be proud. Will the Alumni stand idly by and not be there represented? The University of California was placed on record as the first free University in the world, and was opened to receive all persons of both sexes, without distinction of race or color. The Alumni owe to it a debt which they can never fully cancel. The contribution of an Alumni Hall is but a fitting memorial in recognition of what the University has done for them. The Association is already committed to the plan, the initial payment having been deposited with the Board of Regents. Whatever the Alumni have undertaken in the past has ultimately materialized. They do not expect to get the hall in a day, nor in a month, nor in a year, but they *expect to get it*. They

want every alumnus, present and future, to have a share in it, so that it can be truly said that it is *their* edifice, built entirely with *their* own contributions. Like the drowning frog in the milk can, that kicked and kicked and kicked until he kicked a lump of butter on which he floated to safety, we expect to work and work and work until our Alumni Building is an actual reality. The sum named is a minimum amount. While it may seem large, it is not too large. Houston Hall, at the University of Pennsylvania, and the Harvard Union, at Harvard University, are similar buildings now in successful operation. The former cost \$100,000.00, and the latter a larger sum. The Associated Alumni now living number over 4,600, those from the Berkeley colleges numbering over 2,300. With each year's addition to the ranks, it will be but a short period before they will be doubled, even trebled, in number. Our hope and faith lie in small periodical contributions placed out at interest so that the increment may go to swell the total amount. If we keep digging away, we shall have the required amount before we realize the fact, and glorious success will have crowned our efforts.

Ladies and Gentlemen, will you, who are to become alumni of this great and grand seat of learning, consider these things, and, when you perfect your permanent Class organization and leave these halls at graduation, lend a helping hand to those who have preceded you and whose ranks you will join ?

We have heard much about the Yale spirit, and how the Yale Alumni, standing patriotically shoulder to shoulder have, like the Greek phalanx of old, rallied to the support of that grand old college, and have never hesitated to place their finest energies, intellectual and material, at its service. But we of the Golden State want to know what is the matter with California's spirit, even though it may be more than a century and a half younger than that of its Eastern rival ? Time will demonstrate our spirit to be just as true, just as loyal to our Alma Mater, and just as intense as that of the alumni of any similar Eastern institution.

PROFESSOR JACQUES LOEB.

By MARTIN H. FISCHER.

Professor Jacques Loeb was born in Germany in 1859. His early education was obtained in the Ascania Gymnasium in Berlin, from which he was graduated, taking his *Arbiturienten* examination in 1880. He then studied at the Universities of Berlin, Munich and Strassburg, receiving his degree of Doctor of Medicine from the last-named institution in 1884. In the following year he made his *Staats* examination. During 1885 and 1886 he worked in the physiological laboratories of Berlin, becoming Assistant in Physiology in the University of Wurtzburg in 1886; two years later he became Assistant at Strassburg. In 1889 he made his first excursion to the Marine Biological Station at Naples. During the winter of 1890-91 he again worked at Naples, from which place he went to Bryn Mawr in November of 1891; in June of the following year he accepted the call to the chair of Physiology in the University of Chicago, which he retained until his connection with the University of California in 1902. During the summers of his years spent in America he has worked at the marine biological laboratory at Wood's Hole.

Professor Loeb's earliest scientific work was in nerve physiology, to which he devoted himself for the five years following his graduation in medicine. The most important work of these years is embodied in his papers on the space sensations of the hand, and the scattered articles which

formed the basis of his *Brain Physiology*, the first edition of which appeared in Germany in 1898. The next notable products of his work are recorded in his monograph and shorter articles on Heliotropism, in which was shown the complete analogy that exists between the orientation of an animal toward a source of light, and that of a plant toward the same stimulus. His work on Geotropism, Stereotropism, etc., also appeared at this time. His studies on the effects of light on oxidations paved the way to the study of heteromorphosis, by which is understood the transformation of organs and the substitution of one kind of organ for another. The facts obtained in this field convinced him of the importance of the constitution of living matter in life phenomena, and his labors in this field have yielded a score of papers. The most striking of these were perhaps those on artificial parthenogenesis, the study of which he began some five years ago.

His first successful experiments are detailed in a short paper which he published after a summer's work at Wood's Hole. The end of the spawning season prevented him from pursuing his studies further at that time. In the early spring of the following year he came to the Pacific Coast and continued his work. A long series of experiments corroborated his discovery that a transitory residence in sea water, the concentration of which has been raised a definite amount, will cause the unfertilized eggs of sea urchins to develop into plutei. Since that day he has carried his researches to new forms, and has found that not only a change in the osmotic constitution of the sea water, but also a change in its chemical composition will cause unfertilised eggs to develop into swimming larvae. The fact that electricity is the most universal of all protoplasmic stimuli led Professor Loeb even many years ago to the belief that it ought to be possible to affect life phenomena in just as profound a way by the electrically charged atoms or groups of atoms known as ions as by the electric current itself. His earliest paper on the physio-

logical effect of ions contained the first conclusive proof that came to show that in dealing with the effects of salts upon living tissues we are in reality dealing with the effects of the ions which the salts yield upon solution. It was in his work upon this subject that he studied the poisonous effects of acids and alkalies upon the muscles, the effect of ions upon the absorption of water by muscle, the rôle of salts in the physiology of rhythmic muscular activity and the toxic and anti-toxic effects of ions.

To those whose rare privilege it has been to work beside this master in science it is not difficult to see wherein lies the basis of his successful work. His contributions to the biological sciences are the product of a philosophical and logical mind, the work of an acute and unprejudiced observer, and the result of patient and continual labor.

GEORGE C. PARDEE, GOVERNOR OF CALIFORNIA.

By A. B. NYE.

For the second time California has a Governor who is a graduate of the University, and for the first time, he is a native son. It has taken a little more than half a century for California to become self-governing in the sense that her own sons, educated in her own schools, are found worthy to hold the chief elective offices. A poll of the Legislature would probably show that almost, if not quite, a majority of the members are, like the Governor, a home product. The day of the immigrant has passed in California polities, and nothing is more significant of it than the fact that in the late election the circumstance that the Republican candidate for Governor was a native son appeared to be of no special advantage to him. It seemed so much like the thing naturally to be expected.

The first native son Governor is a San Franciscan. He was born in our largest city a few months less than forty-six years ago, and he came of very sturdy pioneer stock. His father was a mechanic who had the courage and industry to make himself master of a difficult specialty in the field of medicine, and who practised with great success, taking at the same time such intense interest in politics that he became one of the leaders of the young Republican party in California, and was elected to the State Senate, to the mayoralty of the city of his residence, and to several other offices.

He was ambitious for his son, and the latter was reared in an atmosphere of political talk and action which made the career he has followed a natural, almost a necessary, sequence.

The Pardees, it may be said in passing, are an American family of nearly two hundred years' standing, and they trace back their descent to one George (or Georges) Pardee, a young French Huguenot, who landed in the good old colony of Connecticut in 1715. Some of the early ones spelled the name Pardie, and others wrote it Pardy, and the family genealogist gives the explanation (which may be taken for what it is worth) that the original form was Pardieu. In the Revolutionary War the Pardees did valiant service, no less than twenty-nine of them fighting in the ranks of the Connecticut Volunteers. During the era of the westward expansion which followed close upon the achievement of independence, representatives of the family migrated to New York and Ohio, and the name is now a common one in several of the Western States. The new Governor of California is a Pardee of the Pardees, his mother as well as his father having borne that name and descended from the first George Pardee.

When George C. Pardee was a boy in San Francisco, in the early '60's, schools were not numerous, and quite naturally he attended the one which was frequented by the sons of most well-to-do citizens, the old City College, so-called. A number of now prominent business men of San Francisco were his classmates. The family having removed to the Oakland side of the bay, he next became a pupil in McClure's Academy, and later went to the College School, which had been established as a feeder to the College of California. Subsequently he took a three-year course in the Oakland High School. In the University of California he spent five years in all, having first entered the fifth class, which was then, and for some time afterwards, maintained as a useful adjunct to the new institution of learning. His regular University course was taken during the years 1875 to 1879.

The class which has given the State a Governor, a Justice of the Supreme Court, a professor in the University and other more or less distinguished citizens, was much more numerous than any which had entered up to that time, and it was some years before any other of equal numbers followed it. Its members felt very proud when they graduated sixty-eight out of the one hundred and fifty-nine who had entered. It was a class which carried everything before it from the outset, for the seniors, juniors and sophomores were so much weaker in numbers that it was hardly worth while for them to attempt to withstand '79.

In those days baseball was the principal athletic sport at the University. Rugby football was also played, but there were no track athletics. Young Pardee was a baseball player of some reputation and retains to this day a fondness for the game. Charter Day and Class Day were then celebrated with as much spirit as they are to-day. The Governor still recalls with pride that he was president on the day of the Junior Exhibition and was the Prophet on Class Day. But the office which he was called upon to fill as often as there was a meeting of the class was the less dignified one of sergeant-at-arms. The vote by which he was chosen to that position was always unanimous. As a student he stood neither very high nor very low, his rank being near the middle, and that this is the very best rank to occupy in a college class is a proposition which Governor Pardee would at any time drop the cares of state to maintain by arguments quite satisfactory to himself even if not convincing to others.

Professional study in Europe was one of the objects which the young man had long had in mind, and so, after two years of preliminary work in Cooper College, he went to Germany and entered the University of Leipzig, from which he graduated after three years. He is fond of talking about the eminent men whom he met during his University life in Germany—the great Virchow and several

celebrated professors of Leipzig—Ludwig, Coceius, Cohnheim, Wagner, Thiersch and others.

There was one thing which during his stay in Europe the Governor to-be proved he could do, and that was to write readable newspaper letters. A series of seventy-five or more of these letters appeared in the San Francisco *Chronicle*, and their freshness and interest, which last even to this day, were due to the point of view of the writer, who looked into everything which was ancient or established with the audacious irreverence of a California boy who had no idea of being overawed by anything because it had stood unquestioned for centuries.

Returning to his home in 1885, Dr. Pardee began the practice of his profession in San Francisco and Oakland, married, and established a home. It was not over two years, however, before he was led into politics, a not altogether unwilling victim of the men who had discovered that he had natural talents for that sort of thing and wanted to make use of them. Once in, he could never thereafter keep out, which is the case with all who have a gift of leadership. In a short time he became a member of the Oakland City Board of Health, and made a strenuous campaign for purification of the water supply. That created a popular demand that he should be a Councilman, and the people liked his service in the latter office so well that they insisted he should be Mayor. He was, and a stormy time he had of it, with Coxey armies, A. R. U. strikes, Water Front Company suits and injunctions and several other stirring incidents. At the end of his two years he was willing to retire from the turmoil and try a rest, although about all the difference it seemed to make was that he was fighting other men's political battles when he had none of his own.

In 1898 Dr. Pardee, who had long since learned the lesson that knowing what you want and asking for it are the first requisites to success, became a candidate for Governor, and although he was defeated for the time being, he made a distinct impression on the party politicians, and prepared

the way for what followed four years later, when he was nominated and elected.

The occurrences of that political campaign are so recent as not to need reviving. But it may be said in passing that few candidates for Governor have ever been in a position so embarrassing as Dr. Pardee. The head of a party which had a vast majority of votes and was certain to elect all its other candidates, he was for weeks near to defeat and knew it well. Day by day he could watch the progress of the work which threatened to be his undoing. One of those class movements which are as irresistible as they are unlooked for was sweeping away thousands of votes on which he had a right to count, and at the same time he was confronted by dissensions among the politicians of his own party serious enough to wreck the fortunes of almost any candidate. Worst of all, the conditions were such that it was impossible to make an open fight on secret enemies. The only thing which could be done as to many of these proceedings was that which is the hardest of all things to a naturally pugnacious man, viz., to do nothing. Dr. Pardee made his campaign under circumstances which called for extraordinary self-restraint, and the manner in which he made it excited the greatest admiration in those who knew most about it.

In spite of everything he was elected by a small majority, and he has now been in office long enough to permit the State to form some idea of the kind of Governor he will make. In his inaugural address before the Legislature he took sufficiently high ground to show that he intended to stand for the things which are of good repute and make for progress—for better schools, for sufficient appropriations for the University, for educational progress in every direction, for reform of political abuses in the State institutions, for the beginning of a State civil service system, for more enlightened methods of taxation and for far-sighted conservation of the natural resources of California. If the policy outlined in that address is actually carried out it will

mean a new era for the State and for the whole Pacific Coast.

During his first two months in office Governor Pardee has given the politicians several surprises, and among other things he has demonstrated that he was speaking only the truth when he said, last fall, that if elected he would be the Governor. People had grown so accustomed to seeing governors governed that they were slow to believe in a governor who governs. But that is the spectacle which Governor Pardee has been offering for a couple of months, and there is no good reason for doubting that he will continue as he has begun, the able, sane, self-reliant and independent chief executive of California.

UNIVERSITY RECORD.

By VICTOR HENDERSON.

The establishment of a new chair, distinctively for research, is marked by the coming to California of Dr. Jacques Loeb, until December Professor of Physiology in the University of Chicago. Professor Loeb will head the Department of Physiology, his personality will shape all its activities, but instruction will be given primarily by his aides—for the medical students, in San Francisco, by Dr. Martin H. Fischer of the University of Chicago, Dr. John Bruce MacCallum of Johns Hopkins, and Dr. G. Bullot, who has come from Belgium to join Dr. Loeb's staff; for undergraduate students at Berkeley by Dr. Frank W. Bancroft. Dr. Loeb's own time will be devoted to investigation and the organization and direction of research. His seminar, beside the members of his department already mentioned, will include Mr. Charles Gardner Rogers, who has come from the University of Chicago as Research Assistant in Physiology, and a number of graduate students.

A fit habitation for physiology is to be provided through the generous gift of Mr. Rudolph Spreckels of \$25,000. Another friend of the University has offered his coöperation by providing the salary of the chair for three years. The new building, a shingled structure, on the Hillegass Tract just west of the museum storehouse and hard by Hearst Hall, will contain a number of general and research laboratories, rooms for physical chemistry, dissection and

weighing, and a salt-water aquarium for studies in marine life, aerated by an electric pumping plant, and in materials of construction carefully designed to avoid metallic contamination of the water.

A large launch will be provided so that the staff and the department collectors may cruise at will about San Francisco bay.

"Research the University's highest duty" was the keynote of the annual University of California dinner at the San Francisco University Club on January 23d, a dinner which naturally took upon itself the form of a welcome to Professor Loeb. Both there and at a University Meeting on January 30th, Dr. Loeb dwelt upon the State's duty toward creative research. He pointed the example of the State-supported universities of Germany, so richly productive in all fields of human knowledge, and dwelt upon the validity of the higher learning as a people's cause, a truth so thoroughly appreciated in Germany that it is the Social Democrats who urge the most generous provision for the universities.

ASTRONOMICAL RESEARCH.

That research should be made the primary function of a department is no new thing in the University of California. For many years the Lick Astronomical Department, dedicated wholly to investigation, has poured forth such results as to lead Professor Simon Newcomb to characterize it as the most productive center of practical advance in astronomy in the world to-day.

Director Campbell's hopes and plans of a decade are now about to reach their consummation through the D. O. Mills Expedition from the Lick Observatory to the Southern Hemisphere. Astronomer William Hammond Wright, and Mr. Harold K. Palmer, now Instructor in Practical Astronomy, have sailed for South America to establish an outpost of the University of California at Santiago, Chili. For two years Mr. Wright and Mr. Palmer

will carry on observations of the movements of stars in the line of sight. These data, when combined with a great mass of material already accumulated by observation of the northern heavens from Mount Hamilton, will, it is hoped, cast much light on the great problem of the movement of our solar system through space. Director Campbell had hoped to accompany the Mills Expedition, but he has been prevented by serious injuries received at San Diego while testing the apparatus prepared for the expedition. The work, however, will proceed according to the program prepared by Director Campbell.

The Carnegie Institution has granted \$4,000 for computers to aid in working up the Lick Observatory's spectroscopic and photographic observations. A grant has also been received from the Draper Fund, for the construction from special designs of a microscope for measuring spectrograms.

To determine the variation in the position of the earth's axis, which is known to oscillate to an extent and through a period not yet exactly delimited, is the object now being sought by the coöperative efforts of a number of governments and scientific bodies. Dr. Sidney D. Townley has resigned from the Berkeley Astronomical Department to take charge of the newly-established International Latitude Observatory at Ukiah, California. For a number of years observations of extraordinary delicacy will be carried on by the Taleott method at these observatories at Ukiah, in Maryland, in Italy and in India, to obtain a definite solution of such axial variation.

The Rumford Committee of the American Academy of Arts and Sciences recently offered to coöperate in Dr. Townley's researches as to the variable stars by providing funds for the construction of a photometer microscope, from designs by Professor Pickering of Harvard.

The Carnegie Institution has appointed Dr. Ernest Julius Wilczynski, Assistant Professor of Mathematics, Research Assistant. Dr. Wilczynski will avail himself of

this opportunity by spending the coming academic year in Europe, devoting his time to mathematical investigations already planned.

MRS. HEARST'S GIFTS FOR ANTHROPOLOGY.

Research has from its inception been the prime object of the Department of Anthropology, as of the Lick Astronomical Department. The gathering of collections that has gone on has been prosecuted with a view to advancing knowledge, and with the aim of forming a museum primarily a laboratory for research in archaeology, art and anthropology. Publication of results is an essential feature of the department's activities.

For the maintenance of the Department of Anthropology Mrs. Hearst up to June 30, 1902, had expended \$111,088.78, as compared with a total of \$90,100.94 up to December 31, 1901. Mrs. Hearst's annual gift for the support and development of the department exceeds \$42,000.

Her munificence has provided for the exceedingly fruitful excavating and purchasing expeditions in Egypt, Peru, Europe, California and the Southwest; for the acquisition of anthropological material from the Philippines, Alaska, the South Seas, and other parts of the globe; for instruction at Berkeley in the form of set courses or of public lectures by distinguished specialists; for the preservation and recording of the collections accumulated, and for publication.

An Alaskan collection made by Mr. Charles L. Hall, illustrating the natural history and anthropology of western Alaska and the Yukon River basin, is one of Mrs. Hearst's latest gifts to the University. No more thoroughly adequate cabinet has ever been obtained from the region represented. The Hearst collection is supplemented by the Alaskan Museum presented to the University some years ago by the Alaska Commercial Company of San Francisco, and now on exhibition in the nave of the San Francisco Ferry Building.

THE PERUVIAN COLLECTIONS.

Dr. Max Uhle is now working on the five thousand or more antiquities which rewarded the search of the Hearst Expedition to Peru. Some thirty-four hundred objects represent the ancient culture of the valley of Trujillo. Most of the rest of the collection was gathered in the Department of Ica. Dr. Uhle is writing an elaborate report on his researches, and his work will be illustrated with numerous photographs, maps and drawings.

THE ANTIQUITY OF MAN.

To determine the antiquity of the human race on this Coast four distinct lines of research are being prosecuted by the Department of Anthropology, under the direction of Professor J. C. Merriam and at the expense of Mrs. Hearst. The plan of campaign is as follows:

First, the shell mounds and sites of former habitation along the coast are being explored, in an endeavor to determine their age. Second, the limestone caves in eastern and northern California are for the first time being carefully examined. Third, the Quaternary deposits of the Coast Range are being examined for human remains and implements; for it is in such Quaternary gravels that have been found the oldest human remains known to man. Fourth, gold-bearing-gravels in California which appear to be vastly older than any geological formation wherein, thus far, in other parts of the world, human remains have been found, are being searched for evidence of man's past existence.

These researches are of absorbing interest for the light which they will throw upon the great problems of the origin of man in Western North America, the migrations of the earliest human beings on this continent, and the ancient history of the American aborigines.

Researches were carried on by Mr. W. J. Sinclair from early spring to the fall in Tuolumne, Calaveras and Placer counties, the classic region of gold-bearing gravels, the

results of which will be embodied in a report soon to be printed by the University.

A human skeleton of low type was recently discovered in the late Quaternary deposits of Kansas. That the Quaternaries of California are of practically the same age as those of Kansas containing early human remains has been demonstrated by excavations carried on throughout the past year under Dr. Merriam's direction. There exists, therefore, a possibility that human remains may eventually be found therein.

In the caves of Europe have been found some of the oldest of known human remains. The exceedingly interesting caverns of California are now being examined by the Department of Anthropology. Mr. Sinclair visited some of the caves of the Sierra foothills, while in the region of the gold-bearing gravels. In several instances human bones were found, but as yet it has not been possible to demonstrate that any of them are very ancient. In one case bones of extinct animals were found in the same cavern with human skeletons, but the evidence obtained does not show the human remains to be as old as those of the extinct mammals.

The most important cave exploration done by the University has been that by Mr. Eustace Furlong in northern Shasta county. He began work last July. In the first cave examined he found a very extensive deposit of earth and gravel which contained a great quantity of loose bones. These remains were largely of extinct species. Apparently the cave deposits belonged to the late Quaternary. In September Mr. Sinclair succeeded Mr. Furlong in the exploration of the Shasta caves.

These cave deposits present ideal conditions for the occurrence of human remains. The age, the character of the deposits and the location are all similar to those of the famous caves of Europe. The Kansas finds indicate that man was in North America at the time when these deposits were being formed, and there is so strong a possi-

bility of the occurrence of human bones here that the earth is being taken out with the greatest care, in order that the specimens found may be in good condition. Many stones and splintered bones have already been found which possibly represent the work of man. The work is still so far from completion that conclusions cannot yet be drawn. Many other caverns in this region are to be explored.

A map of the shell mounds about San Francisco Bay is now being prepared. This work shows the mounds to be exceedingly numerous, and its execution has brought out many interesting points not hitherto discussed.

THE LIVING INDIANS.

The languages, myths, and ways of life of the California Indians engage the attention of Dr. Alfred L. Kroeber and Instructor Pliny E. Goddard. The University's collection of ethnological material from the northern part of California is now very complete.

A journey of seven hundred miles by wagon and saddle undertaken last summer by Mr. Goddard resulted in the accumulation of a mass of interesting ethnological material. The objects in view were the gathering of mythological and linguistic matter from the Indians living on Redwood Creek and on the South Fork of Trinity, for comparison with Hupa material; the determination, if possible, of the relations of the people formerly living on and about New River and on Salmon River and the location of the settlements of the Athapascans in Mendocino county and the southern part of Humboldt.

Mr. Goddard, accompanied by Dr. Willis L. Jepson of the Department of Botany, left Ukiah by wagon early in June. At the rancheria at Sherwood he secured a Pomo word-list. At the rancheria at Catho, west of the old overland stage road to Eureka, the Indians furnished much information concerning their former and present customs, and a fair vocabulary was secured. These Indians have long been classified as Pomo. Mr. S. A. Barrett, '05, one

of Mr. Goddard's students, has now established the fact that they are really of Athapascan stock, their language closely resembling the Wailakki.

Passing by the Athapascan villages near Blocksburg, and the settlements on the tributaries of the South Fork of Eel River, Mr. Goddard camped for a week on Redwood Creek. Through making friends with the old men of the tribe he was able to secure interesting texts and much information concerning their language, which is almost identical with the Hupa, and their religion, which differs widely from Hupa beliefs.

From South Fork, where ends the wagon road, Mr. Goddard and Dr. Jepson set off with pack horses through the mountains. By great good fortune they came upon two full-blooded adults who spoke Chimariko. It had been feared that Chimariko must die unrecorded, for of the only two individuals hitherto supposed to be left of these people one was too old to aid, the other too superstitious. Mr. Goddard secured a good Chimariko word-list. Names were learned of other individuals who could speak the language, so that now nine adult full-blooded Chimarikos are known who possess this speech.

Important texts of myths were secured at South Fork from the one old man living there. His people, now vanished, were practically a part of the Hupa tribe. An old woman was found who gave to Mr. Goddard a short list of words—all that she could remember—of her native tongue. She said that while she herself from long isolation had wellnigh lost the language, there were, she believed, Indians on New River who still spoke it. At the head waters of the South Fork of the Salmon River a woman was found who spoke the Sastean language, and another who knew a few words of Chimariko. From the fruitlessness of the search it seems probable that the few scanty words first gathered will remain as the only trace of this now dead language.

The Klamath River country was visited by Dr. Kroeber

in July. Ethnological material was gathered concerning the Yurok, Kurok, Shasta, Wishosk and Chamariko tribes. Special attention was paid to mythology and religion. New linguistic material was gathered concerning the Chimariko. An interesting comparative study was prosecuted of the ethnology of the Yurok and the closely related Kurok. Dr. Kroeber spent September in a journey from Ukiah to the Klamath River, and to the habitations of the Yuki Indians at Round Valley.

Some six hundred photographs illustrating Indian types and Indian life have recently been taken by Dr. Philip Mills Jones. For this purpose visits were made to the Mojaves, the pueblo Indians of Laguna, Acoma, Acomita, Oraibi (the Moqui), and the Navajos. The Moqui snake dance was photographed, and photographic studies made of the Cañon de Chelly, as well as of the Navajos living thereabout. In gathering this series illustrative of Indian types, each individual was photographed twice—full face and in profile. For purposes of comparison the heads were taken to a uniform size.

The life and customs of the Sioux are illustrated by a significant collection of costumes, implements and weapons recently gathered for the University at Mrs. Hearst's instance by Mr. F. La Flesche.

Mrs. Zelia Nuttall has presented to the University a number of ethnological specimens collected during a recent journey in Mexico. Among her gifts are some rare embroidered garments from Chiapas.

NAVAJO RESEARCHES.

Dr. Washington Matthews, whose many years of life at frontier posts as an army surgeon gave him opportunity for important linguistic and ethnological researches among the American Indians, is to publish the results of a life-time of study of the Navajos through the University Press. For the next fourteen months his entire time will be devoted to the preparation of his manuscripts for printing. Upon the

publication of his results, all his manuscripts, notes and contributory data will be added to the University's anthropological collections. It is through Mrs. Hearst's aid that these matters have been arranged.

EXCAVATIONS ABOUT THE EGYPTIAN PYRAMIDS.

The right to excavate in the region about the great pyramids has been granted by the Egyptian government equally to the Hearst Expedition from the University of California, to Germany and to Italy, the three having the privilege of dividing the field among themselves. Work in a field so rich in historical significance will be watched with keen attention. Until February Dr. George A. Reisner, Director of the University's expedition, kept his native diggers at work near Girga, a field which he has found very fertile.

THE TEBTUNIS PAPYRI.

The first fruits of the University's researches in Egypt to be given to the world are embodied in "The Tebtunis Papyri," a volume of some seven hundred pages, just published by the University at the Oxford University Press. This and four succeeding volumes will contain the texts of the papyri found at Umm-el-Baragat in the Fayoum by Dr. Arthur F. Hunt and Dr. Bernard P. Grenfell while excavating for the University—a collection said to exceed in quantity all the Ptolemaic papyri written in Greek in all the museums of the world. These papyri had been used as wrappings for the mummies of sacred crocodiles. The texts are of unusual length, many containing as much as two hundred lines. Most are official documents—correspondence, temple accounts, land revenue papers or instructions. A marriage contract and papyri throwing light on the relative value of silver and copper are notable. In this volume portions of some texts are reproduced in fac simile, translations are given of others, there are an exhaustive commentary and copious indices. The next

volume will contain the texts of the Roman period. Dr. Goodspeed of Chicago is to aid in their editing.

The Hearst Medical Papyrus which Dr. George A. Reisner was so fortunate as to find in Egypt, in the possession of a native, is now in the hands of a Leipzig printer. Dr. Reisner is at work upon the first volume of the Memoirs of the Hearst Egyptian Expedition. His excavations will be described, mapped, and pictured in all fullness of detail in a series of volumes, for several of which material has already been gathered.

Dr. Uhle's report on the excavations at Shell Mound, on the Emeryville shore, which occupied his attention for some months, has now been completed, and soon will come from the University Press. This report describes the running of a trench through one of the largest and most important Indian mounds in California. Two thousand years or more of habitation were evidenced by the accumulated bones, ashes, shells, utensils and weapons.

Mr. Goddard has ready for publication a volume of Hupa texts with translation and commentary. This volume will form the first of the series of University of California Publications in American Archaeology and Ethnology. Dr. Kroeber also has much linguistic and ethnological material in preparation for publication. Upon the resignation of Mr. G. J. M. E. d'Aquin as Assistant Secretary and Executive Officer of the Department of Anthropology, Dr. Kroeber was appointed as his successor.

SOME OTHER PUBLICATIONS.

Among recent publications in various fields by other members of the University are Professor Elmer E. Brown's book, "The Making of Our Middle Schools" (Longmans, Green & Company), a contribution to the history of American civilization in general and of American education in particular; "Irrigation Institutions" (Macmillan), a volume in which Professor Elwood Mead summarizes the results of twenty years of experience in the development of agricul-

ture under irrigation in the arid West, experience gained as State Engineer of two commonwealths, as Professor of Irrigation in two State Universities, and as Irrigation Expert in charge of the irrigation investigations of the United States Department of Agriculture; and a scholarly edition of Thomas Deloney's "The Gentle Craft," a collection of some of the earliest of English short stories, published in Berlin by Professor Alexis F. Lange as the eighteenth number of *Palæstra*. The articles on philology and linguistics in the new Dictionary of Philosophy and Psychology (Macmillan) bear President Wheeler's signature.

FORESTRY EXPERIMENT STATION.

An undertaking which promises high scientific and practical usefulness is the Forestry Experiment Station just established at the University by the United States Bureau of Forestry. Dr. W. K. Hatt, Civil Engineer in the United States Department of Agriculture, has come from Washington to inaugurate the work. An engineer detailed from the Bureau for permanent service in Berkeley will carry on continuously in the Civil Engineering Laboratory tests as to the strength and durability of Pacific Coast woods, their chemical and physical characters, preservative methods and means of seasoning. The results will be published in bulletins of the Bureau of Forestry.

The University has been glad to coöperate in experimentation of so much public importance by offering the use of its laboratories. Such scientific work is of intimate concern to the State. It is similar in kind to the investigation of agricultural problems continually carried on by the Experiment Station staff—such work as Mr. Warren T. Clarke's successful campaign against the peach moth, or Mr. Davy's planting experiments for the restraint of shifting beach sands, or the beet sugar and olive oil investigations of Professor Shaw, or the animal industry studies of Mr. Major and Dr. Ward.

Coöperation between the farmer and the University is

being made the watchword of the investigations of the Department of Agriculture. It is felt that the best results can be obtained by not confining experimentation to the Stations, but by enlisting the aid of the ranchers, and by going where help is needed. It was thus that a means was found at Newcastle for eliminating the destructive peach moth, and it is thus that Professor Woodworth has begun, with the help of a large number of fruit-growers in the neighborhood of Watsonville, an active fight against the codling-moth, the chief existing threat to the California fruit industry. Prevention of the bursting of peach-pits is another object of special study.

The formation of a University herd has been begun by the importation from Montreal of a number of fine Ayrshire cattle. Some thoroughbred Guernseys have been brought from Portland. Representatives of the other chief breeds will be added to the herd. A dairy-barn has been built in Strawberry Cañon, among the hills in the eastern part of the University estate.

The greatest present need of the Agricultural Department is a large experimental farm, with plenty of arable land, good barns, equipment and farming machinery, provision for dairying and animal industry, and opportunity, within easy reach of the University, to carry on all the ordinary agricultural processes.

THE UNIVERSITY AND THE SCHOOLS.

The early use of the new system of examination of secondary schools is ensured by the appointment of Mr. W. Scott Thomas, formerly Principal of the Merced High School and now at Teacher's College, as School Examiner and Assistant Professor of Education.

Between August and December of each year, beginning with next August, Professor Thomas will visit those high schools which seek accrediting. His aim will be the investigation of general organization, of balance, of relation, of spirit, of efficiency. From January to May of each

year specialists will go out from the University to examine individual departments. Meanwhile, that he may keep himself in touch with the University as well as with the schools, Professor Thomas will offer instruction at Berkeley in the Department of Education.

The new system means that individual departments in the high schools will still as of old have the stimulation that comes from contact with the specialist, but that accrediting will be based not on knowledge of parts of schools alone, but also on the knowledge of an unprejudiced and sympathetic observer who comes not to see his specialty taught, but to know the school in its spirit and life. This combination of the Michigan or Minnesota system of examination by a single School Examiner with what has been known as the California system, of examination of each department by a specialist, seems likely to retain the advantages of both systems and to obviate the onesidedness of either alone.

Hearty coöperation with the secondary schools is the University's strong desire. At President Wheeler's request the California Association of High School Teachers appointed a large committee to confer with a similar committee from the University faculty as to the execution of the new system for examining schools. Such conferences should be fruitful of complete understanding and of helpful coöperation.

THE SUMMER SESSION.

The Summer Session has shown itself a useful force, and an opportunity desired and appreciated. Last summer's enrollment of 830 exceeded that of any other American university's summer school, save only that of Chicago, which is on the same basis as the regular winter terms.

For next summer varied courses will be offered. The teaching body will include, among the men from the regular faculty, Professor H. Morse Stephens in History, Professor Adolph C. Miller and Mr. Lincoln Hutchinson in Political Economy, Dr. H. W. Prescott in Greek, Professor Leon J.

Richardson in Latin, Professor Chauncey Wetmore Wells in English, Professor Hugo Karl Schilling and Mr. Ludwig Demeter in German, Mr. Carlos Bransby in Spanish, Mr. Marius J. Spinello in Italian and French, Professor Irving Stringham, Dr. Charles A. Noble and Dr. Derrick N. Lehmer in Mathematics, Professor W. J. Raymond in Physics, Dr. F. G. Cottrell and Mr. Edward Booth in Chemistry, Professor W. J. V. Osterhout in Botany and Dr. George F. Reinhardt in Physical Culture.

A number of distinguished scholars will come from the eastern universities. Among them will be George H. Palmer, Alford Professor of Natural Religion, Moral Philosophy and Civil Polity in Harvard University; Albert Bushnell Hart, Professor of History in Harvard University; Paul Monroe, Professor of the History of Education in Columbia University; Charles E. Bennett, Professor of Latin in Cornell University, and other well-known men in the fields of ethics, psychology, education, English, Romanic languages, mineralogy and forestry.

Opportunities for conferences on University Extension work are a valued part of the summer sessions at Oxford and Cambridge. Professor H. Morse Stephens, Director of University Extension, plans to hold such conferences throughout the Summer Session, to assist in arranging for future University Extension work.

An interesting feature of this winter's work in University Extension has been the courses offered in San Francisco by Mr. Yoshisaburo Kuno in Japanese and by Mr. Walter N. Fong in Cantonese. Professor Plehn is giving a course of lectures before the San Francisco Chapter of the American Institute of Bank Clerks, on the "History of Banking in America," and Professor Gayley, before the Alameda County teachers, a course on "The World's Great Books."

THE YEAR'S GROWTH IN NUMBERS.

University extension goes on apace at home. By February 10th the undergraduate registration for the

year had reached 2440. This is 11.7 per cent, or 192 more than the entire undergraduate enrollment of last year,—2248. This increase will show still larger when the final figures for the year are compiled next May. Including the professional students in San Francisco, the year's registration will exceed 3250, and counting also the 830 students in the last Summer Session, and those in last fall's ten-week courses in dairying and in general agriculture, the enrollment for 1902-03 will have exceeded 4100. This excludes some 1800 or more regular attendants upon University Extension courses.

TEN-FOLD INCREASE IN MINING.

There are ten times as many students in the College of Mining as there were nine years ago. This large rate of increase, which shows no present promise of abatement, makes it the more fortunate that the noble habitation which Mrs. Hearst is rearing for the science of mines is planned on the most capacious and most generous lines. To-day one out of every five male undergraduates at Berkeley is studying mining.

While the Hearst Memorial Mining Building, with its large and varied laboratories, mills and shops, will provide most amply for every need of the Mining Department proper for years to come, yet it will house only instruction in mining and metallurgy and not in allied sciences. The inrush of mining students has crowded beyond endurance the already inadequate facilities for instruction in physics, chemistry, geology, drawing, and similar subjects basic for technical courses. Separate buildings for physics and for geology are particularly needed.

THE GREEK THEATRE.

The Greek open-air theatre which Mr. William R. Hearst has presented to the University will be ready for next Commencement—Wednesday, May thirteenth. Mr. John Galen Howard's beautiful design in archæological detail is studied

primarily from the Greek theatre at Epidaurus. The plan is perfectly fitted to the favoring conformation of the natural hollow in the hills on the eastern side of the University grounds, since Class Day of 1894 known as "Ben Weed's Amphitheatre."

The theatre will not be built of temporary materials, as was at first intended, but permanently, of concrete. On the rising slopes of the natural amphitheatre will curve tiers of concrete steps to serve as seats for seven thousand five hundred spectators. Across the lower end of the hollow will be thrown the stage, one hundred and sixty by forty feet in size, and backed by a massive wall forty-five feet in height, pierced by three entrances.

This beautiful Greek theatre among the hills and eucalyptus groves will furnish a superb setting for the traditional open-air Class Day spectacle, and for future Commencements and Charter Days. The throngs on great University days such as these have now waxed so great that only in the open air can place be found for them.

OTHER BUILDING IMPROVEMENTS.

A response to a crying need are the seminar-rooms in the upper floor of the new addition to the Library. This addition will shelter an additional seventy-five thousand volumes. Of the six seminar rooms, one will be devoted to Philosophy and Education, and the others to History, to Economics, to English, to Modern Languages and to Greek and Latin.

The new addition to the Chemistry Building will shelter the Chemical Museum and set free the old museum quarters for Dr. F. G. Cottrell's newly-organized courses in physical chemistry.

The Faculty Club has been completed, equipped and occupied. Mrs. Hearst's thoughtfulness shows in some fine old etchings on the walls, and a carved oak library table. Instructor C. C. Judson has painted a panel, "A book of verses underneath the bough," for the east end of

the dining hall, furniture has been made from special designs by Instructor F. H. Meyer, and university shields, caribou horns, Filipino arms, Moro flags and other mementoes have joined with Mr. Maybeck's charming interior to give the place an individuality altogether pleasing. One room in the club has been set aside for the entertainment of special University guests.

Much anxiety was caused in January by the discovery that there seemed imminent possibility of the collapse of North Hall, oldest and poorest of the University buildings, and crowded daily and all day long, often with a thousand students beneath the roof at once. Careful examination showed that certain roof-timbers had sprung, that certain floors had sagged, and that the supports of parts of the building were inadequate. Classes were at once removed from the portions of the building involved. A thorough-going overhauling was undertaken, and heavy timbers put in wherever there was need. With these repairs, danger of collapse is past. None the less the building is worn out and deserves to be torn down.

STUDENT SELF-HELP.

Self-help is already a necessity for a very considerable number of the students of the University. Statistics gathered by the Young Men's Christian Association a year or so ago showed that not less than one-third of the students at Berkeley depended for their expenses either wholly or in part upon their own endeavors. Such as these are an honor to the University, a helpful part of the community and of high promise for life.

Mr. Levi Strauss, a pioneer merchant of San Francisco, who died September 27, has since 1897 supported twenty-eight scholarships at the University. The good derived therefrom has been incalculable. His generosity has meant outlook and opportunity for a great number of students who without that help would have found a university education wholly beyond their reach.

Mr. Strauss was an admirable type of business man, sane, straightforward and large-minded. His generosity will be a never-failing memory in the minds of the men and women to whom it has meant so much.

Appreciation of the true meaning of a scholarship was strikingly shown by the recent action of Miss Adrienne Cerf in returning to the University \$150 as principal and interest for a scholarship which she had held throughout a university year. In recognition of Miss Cerf's action, the Regents will devote the money either to the establishment of a special one-year scholarship, as was done when Mr. Ralph C. Daniels, '99, made a similar gift to the University, or will provide for a loan fund. This is the second gift of this kind from Miss Cerf. There is great need of increased funds whose interest might be loaned to students wishing to repay such amounts after getting a start in the world. The money available for this purpose is extremely limited in amount.

GIFTS TO THE UNIVERSITY.

Were it not for the gifts of friends, the University would find it impossible to meet in decent degree its necessities. A week never goes by without such kindnesses, for the most part small in amount, but inspiring from their testimony to the love of alumni and the constancy and faith of other friends.

The past two academic years, with their total of gifts of over \$900,000, have seen a number of considerable benefactions, such as the provision for the Hearst Mining Building, Mr. D. O. Mills's increase in the endowment of the department of Philosophy, and his provision for the Mills Expedition to Chili, and the Sather Gateway. Within the past few months there have come Mr. William R. Hearst's provision for the permanent equipment of the open-air Greek Theater, Mr. Rudolph Spreckels's gift of the Spreckels Physiology Building, and the support by another friend of the chair of Physiology; the offer of Levi Strauss

and Company to continue the Levi Strauss Scholarships, of a total annual value of \$3,500; Mrs. William H. Crocker's book-fund of \$2,500; the gift of Mrs. Crocker and Mrs. Whitelaw Reid, of New York, of \$5,000 for the prosecution of archaeological research in Mexico; Mr. W. B. Ewer's gift of his important collection of clippings on scientific and technical subjects, and of his files of engineering and scientific journals; Mr. James K. Moffitt's annual gift to the Library; Mr. Ernst A. Denicke's offer to increase the income of the Denicke Fund for the purchase of German books to \$100 per annum; Colonel George W. Bauer's gift of \$100 for the library of the Department of Chemistry; gifts from Judge Curtis H. Lindley of models of mines famous in litigation; from the Pelton Water Wheel Company of a three-foot standard Pelton water-wheel, with all the fittings for the water end of a modern high-head plant of two hundred horse-power; from Mr. Nathan Bentz of Santa Barbara, of a bronze image of a Japanese thunder-god; from the undergraduate Civil Engineering Association of \$30 for books for the department library; and also the second Adrienne Cerf Scholarship, and the offer by Mr. James H. Hyde and Mr. Charles B. Alexander of New York, to provide four lectures in French next Spring, by Léopold Mabilieu of Paris. Mrs. Fairfax H. Wheelan and Mrs. Charles Keeler have designed a number of bookplates for special libraries, given or endowed.

As always, Mrs. Hearst's name must recur again and again. The great Mining Building is rapidly assuming form, the anthropological collections wax apace, a new asphalt tennis court is to be built for the women students, twelve blocks of ore from twelve levels a hundred feet apart in the Homestake mine have been presented to the Mining Museum, and books, pictures and subscriptions to University causes have come from her generous hands.

UNIVERSITY MEETINGS.

The large proportion of alumni among the speakers has

been a pleasant feature of recent University Meetings. Mr. John R. Glascock, '65, and Professor Alonzo E. Taylor preached the true gospel of athletics on November 7th, the eve of the football game; on November 21st, Mr. Charles Butters, '79, told of the duties and opportunities of university-trained engineers, and Hon. Frederick S. Stratton, '81, Collector of the Port for San Francisco, spoke on American national heroes. December 5th, former President William T. Reid spoke on past evils and present snares in student life, and Professor T. R. Bacon on student ideals. January 13th, Principal Booker T. Washington, of the Tuskegee Institute spoke on industrial education for the negro race, and a collection of a thousand dollars was taken up in the audience.

The Legislature came in considerable numbers to the University Meeting of January 16th. Addresses were made by Senator G. Russell Lukens, Assemblyman William H. Waste, Assemblyman Henry E. Carter, Assemblyman J. V. Snyder, Assemblyman C. F. Pann, Assemblyman Marshall Black, Senator M. L. Ward, and Senator W. C. Ralston, Professor Frank Soulé, President S. Bruce Wright of the Associated Students, and President Wheeler. The Legislators afterwards lunched with President and Mrs. Wheeler at Hearst Hall, viewed the University, and went to tea with Mrs. Wheeler at the President's house, and with Mrs. Hearst at her home on Scenic avenue.

January 30th, Professor Loeb spoke on creative research, and Mr. Frank H. Short, of Fresno, on the duty of enjoying one's environment and appreciating California; February 13th President David Starr Jordan of Stanford made wholesome and witty comment on some "things he didn't like about universities"—irregularity of life and "muckerism"—and Mr. I. W. Hellman, Jr., '92, recently chosen Treasurer of the Regents, spoke of alumni responsibilities.

LECONTE MEMORIAL DAY.

The annual University Memorial Day, an occasion conducted wholly by the students, was held as customarily

on February twenty-sixth, the anniversary of the birth of Professor Joseph LeConte. The exercises were commemorative of Frank Norris, '94, cut down so untimely on the threshold of an already brilliant career; of James Wilson, Assistant Professor of Irrigation, staunch and wise and active in a great public cause; of Regent James Franklin Houghton, Regent W. H. L. Barnes, and former Regent Horatio Stebbins, wise counselors of the University; of Jerome Jean Baptiste Argenti, Professor of Botany, Materia Medica, Microscopy, Vegetable Histology and Pharmacognosy, and for many years a great source of strength to the Department of Pharmacy; of Levi Strauss, donor of the Strauss Scholarships, of Lewis Gerstle and Louis Sloss, each of whom had served the University as its Treasurer, and in memory of all other members of the University, students, faculty or alumni, who had died during the year.

The memorial exercises were brief and simple. There was an invocation by Rev. Mr. Work, chorals by the Glee Club and the Choral Society, and a brief address by Warren Olney, Jr., '91. A bronze bust of Professor LeConte was unveiled by Professor Eugene W. Hilgard. President Wheeler accepted for the University this gift of alumni and friends, a gift rich in memories and inspiration.

OTHER PUBLIC DAYS.

President Roosevelt expects to give the Commencement Address on May 13th, unless national affairs should intervene. Dr. Albert Shaw, Editor of the American Monthly Review of Reviews, is to give the first Barbara Weinstock Lecture in the field of the Morals of Trade, in May; and Monsieur Léopold Mabilleau is to deliver the annual French lectures from May thirteenth to sixteenth. Former Mayor James D. Phelan gave the Founder's Day Address at the Wilmerding School on February sixth. A University shield and colors were hung in a corridor of the Medical Department Building on November 7th with appropriate exercises.

UNIVERSITY REPRESENTATION.

To the International Congress of Historical Sciences, in Rome, Italy, from the twentieth to the twenty-ninth of next April, the University has accredited Professor William Carey Jones, Professor Edward B. Clapp and Professor Bernard Moses, who has resigned his place in the United States Philippine Commission, after two and a half years of arduous public service, and who is now traveling homeward by way of Java, Ceylon, India and Egypt, pursuing as he goes special studies in regard to the government of dependencies.

Professor Irving Stringham and Professor Armin O. Leuschner represented the University at the annual meeting of the Association of American Universities in New York during the holidays; Professor H. Morse Stephens attended the annual meeting of the American Historical Association, in Philadelphia; Director Campbell and Professor Leuschner went to the Washington meeting of the Astronomical and Astrophysical Society of America; Professor Joseph Marshall Flint, to the convention of the American Anatomical Society; Professor Stringham, to the annual meeting of the American Mathematical Society; Professor Carl C. Plehn, to the convention of the American Economic Association; and Professor J. C. Merriam, to the convention of the American Association for the Advancement of Science.

Mr. D. O. Mills represented the University at the dinner given in New York on November 15th by Mr. Chauncey Depew and Mr. James H. Hyde in honor of Ambassador Cambon of France. President Wheeler was the principal speaker at the banquet given in San Luis Obispo on January 31st in honor of the laying of the corner-stone of the California Polytechnic School. Professor Leroy Anderson, the director, resigned the direction of the University's newly-established work in dairy husbandry to organize this new institution.

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